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Comparative Effectiveness Review
Number 89

Child Exposure to Trauma: Comparative Effectiveness of Interventions Addressing Maltreatment



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Child Exposure to Trauma: Comparative Effectiveness of Interventions Addressing Maltreatment

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Preface

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Systematic reviews are the building blocks underlying evidence-based practice; they focus attention on the strength and limits of evidence from research studies about the effectiveness and safety of a clinical intervention. In the context of developing recommendations for practice, systematic reviews can help clarify whether assertions about the value of the intervention are based on strong evidence from clinical studies. For more information about AHRQ EPC systematic reviews, see www.effectivehealthcare.ahrq.gov/reference/purpose.cfm.

AHRQ expects that these systematic reviews will be helpful to health plans, providers, purchasers, government programs, and the health care system as a whole. Transparency and stakeholder input from are essential to the Effective Health Care Program. Please visit the Web site (www.effectivehealthcare.ahrq.gov) to see draft research questions and reports or to join an e-mail list to learn about new program products and opportunities for input.

We welcome comments on this systematic review. They may be sent by mail to the Task Order Officer named below at: Agency for Healthcare Research and Quality, 540 Gaither Road, Rockville, MD 20850, or by email to epc@ahrq.hhs.gov.

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Key Informants are the end users of research, including patients and caregivers, practicing clinicians, relevant professional and consumer organizations, purchasers of health care, and others with experience in making health care decisions. Within the EPC program, the Key Informant role is to provide input into identifying the Key Questions for research that will inform health care decisions. The EPC solicits input from Key Informants when developing questions for systematic review or when identifying high priority research gaps and needed new research. Key Informants are not involved in analyzing the evidence or writing the report and have not reviewed the report, except as given the opportunity to do so through the peer or public review mechanism.

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Structured Abstract

Objectives. (1) To assess the comparative effectiveness of interventions (psychosocial and/or pharmacological) for children age 0 to 14 exposed to maltreatment in addressing child well-being outcomes (mental and behavioral health; caregiver-child relationship; cognitive, language, and physical development; school-based functioning) and child welfare outcomes (safety, placement stability, and permanency); (2) To assess the comparative effectiveness of interventions (a) with different treatment characteristics, (b) for child and caregiver subgroups, and (c) for engaging and retaining children and/or caregivers in treatment; and (3) To assess harms associated with interventions for this population.

Data Sources. MEDLINE[®], PsycINFO[®], Social Science Citation Index[®], and the Cochrane Library. Additional studies were identified from reference lists and technical experts.

Review Methods. A team of reviewers, including clinicians specializing in child trauma treatment, independently reviewed, extracted data from, and rated the risk of bias of relevant trials. Decisions required agreement between two independent reviewers, with disagreements regarding inclusion or exclusion resolved by a third. We qualitatively synthesized results; quantitative analysis was not appropriate due to clinical heterogeneity, insufficient numbers of similar studies, and wide variation in outcome reporting.

Results. We found a total of 24 trials and 1 cohort study of either medium or low risk of bias from our review of 6,282 unduplicated abstracts. Although pharmacotherapy was included in our definition of interventions for this review, we did not identify any eligible studies for inclusion. Our main finding was that the literature in this field is strikingly limited due to numerous substantive and methodological gaps. These limitations include (a) the predominance of single trials conducted by the treatment developers testing unique interventions which often employ strategies very similar to those of other approaches, (b) usual care, wait-list, or derived controls rather than head-to-head comparisons with bona fide alternative treatments, (c) short-term outcomes, (d) inadequate reporting of attrition, and (e) wide heterogeneity in type and psychometric soundness of outcome measurement across studies. Given the nascent state of the field, it is too early to make strong recommendations based on the available comparative effectiveness research. However, our review suggests that several interventions show promising child well-being and child welfare benefits and summarizes these findings by salient population subgroups including child age, type of maltreatment, and caregiving context (maltreating parents or foster/kinship parents).

Conclusions. This review serves as an urgent call for improving and building the evidence base for interventions to promote the well-being of maltreated children. A multisite research network is a powerful platform that could facilitate the conduct of large, methodologically rigorous comparative efficacy and effectiveness trials needed to move the field forward. More broadly, a paradigm shift is required on the part of researchers and funders alike to galvanize the commitment and resources necessary for conducting collaborative clinical trials with these particularly vulnerable children and families.

Contents

Executive Summary	ES-1
Introduction	1
Background	1
Definitions	2
Incidence and Prevalence	3
Etiology	4
Disease Burden	6
Intervention Strategies	7
Parenting Interventions	7
Trauma-Focused Treatments	10
Enhanced Foster Care Interventions	11
Scope and Key Questions	13
Scope of This Review	13
Need for Comparative Effectiveness of Interventions for Maltreated Children	15
Key Questions	15
Analytic Framework	16
Organization of This Report	17
Methods	18
Topic Nomination, Development, Refinement, and CER Protocol	18
Literature Search Strategy	19
Search Strategy	19
Inclusion and Exclusion Criteria	19
Population	21
Interventions	22
Comparators	23
Outcomes	23
Timing	25
Setting	25
Study Designs	25
Study Selection	26
Data Extraction	26
Risk of Bias Assessment	26
Data Synthesis	27
Strength of the Body of Evidence	28
Applicability	30
Peer Review and Public Commentary	30
Results	31
Introduction	31
Results of the Literature Searches	31
Overall Description of Studies	32
Population	32
Intervention	33
Comparator	34
Outcomes	34
Timing	34

Setting	34
Key Question 1. Comparative Effectiveness of Interventions for Improving Child Well-Being Outcomes	34
Organization.....	34
Parenting Interventions	35
Trauma-Focused Treatments	53
Enhanced Foster Care Interventions	67
Key Points	81
Detailed Synthesis.....	81
Key Question 2. Comparative Effectiveness of Interventions for Improving Child Welfare Outcomes	87
Organization.....	87
Parenting Interventions	87
Trauma-Focused Treatments	96
Enhanced Foster Care Interventions	96
Key Points	99
Detailed Synthesis.....	99
Key Question 3. Comparative Effectiveness of Interventions With Different Characteristics	105
Organization.....	105
Description of Included Studies.....	105
Theoretical Orientation	106
Key Question 4. Comparison of Intervention Effectiveness for Improving Child Well-Being or Child Welfare Outcomes in Population Subgroups	107
Organization.....	107
Description of Included Studies.....	108
KQ 4a. Child Well-Being and Child Welfare Outcomes in Child Subgroups	110
KQ 4b. Child Welfare and Child Well-Being Outcomes in Caregiver Subgroups	118
Key Question 5. Comparative Effectiveness of Interventions With Children Exposed to Maltreatment for Engaging Children and/or Caregivers in Treatment	122
Organization.....	122
Key Question 6. Adverse Events Associated With Interventions for Children Exposed to Maltreatment	125
Organization.....	125
Description of Included Studies.....	125
Active Surveillance of Harms (Included in KQ 6)	125
Spontaneous Reporting of Adverse Events.....	126
Discussion	127
Key Findings and Strength of Evidence	127
Overview	127
Key Question 1. Comparative Effectiveness of Interventions for Improving Child Well-Being Outcomes.....	128
Key Question 2. Comparative Effectiveness of Interventions for Improving Child Welfare Outcomes	131
Key Question 3. Comparative Effectiveness of Interventions With Different Characteristics.....	133

Key Question 4. Comparison of Intervention Effectiveness for Improving Child Well-Being or Child Welfare Outcomes in Population Subgroups	134
Key Question 5. Comparative Effectiveness of Interventions With Children Exposed to Maltreatment for Engaging Children and/or Caregivers in Treatment.....	136
Key Question 6. Adverse Events Associated With Interventions for Children Exposed to Maltreatment	137
Applicability	138
Population	138
Intervention	138
Comparators	139
Outcomes	139
Setting	140
Limitations of the Comparative Effectiveness Review	140
Limitations of the Evidence Base	141
Study Design and Methodology.....	141
Study Measurement and Analysis.....	143
Future Research Needs	143
Head-to-Head Trials.....	143
Intervention Considerations	144
Assessment of Clinical Need	144
Outcomes	144
Research on Engagement/Retention	144
Study Design and Reporting	145
Statistical Considerations.....	145
Implementation and Sustainability Research.....	145
Implications for Research	146
Implications for Clinical Practice	146
Implications for Policy.....	147
Conclusions.....	148
References	150

Tables

Table A. Population, Intervention, Comparator, Timing, Setting (PICOTS)	ES-5
Table B. Summary strength of evidence for Key Questions 1 and 2.....	ES-9
Table C. Key Question 4 summary.....	ES-13
Table 1. Parenting interventions: Key features.....	8
Table 2. Trauma-focused treatments: Key features	10
Table 3. Enhanced foster care interventions: Key features.....	12
Table 4. Population, Intervention, Comparator, Timing, Setting (PICOTS).....	20
Table 5. Included measures.....	24
Table 6. Study inclusion criteria	25
Table 7. Risk of bias assessment questions	26
Table 8. Intervention A versus usual care, results (sample table)	28
Table 9. Definitions of the grades of overall strength of evidence	29
Table 10. Total number of studies (trials and cohort studies).....	33
Table 11. Numbers of trials and articles investigating child well-being outcomes: Parenting interventions.....	35

Table 12. Attachment and biobehavioral catch-up: Study characteristics	36
Table 13. Results: Attachment and biobehavioral catch-up versus active control	38
Table 14. Results: Attachment and biobehavioral catch-up versus wait list	39
Table 15. Detailed strength of evidence grading table: Attachment and biobehavioral catch-up.....	40
Table 16. Attachment-based intervention: Study characteristics.....	40
Table 17. Results: Attachment-based intervention versus usual care.....	41
Table 18. Detailed strength of evidence grading table: Attachment-based intervention.....	42
Table 19. Child-parent psychotherapy: Study characteristics.....	42
Table 20. Results: Child-parent psychotherapy versus active control versus usual care.....	44
Table 21. Detailed strength of evidence grading table: Child-parent psychotherapy.....	45
Table 22. Incredible years adaptation: Study characteristics.....	45
Table 23. Results: Incredible years adaptation versus usual care	46
Table 24. Detailed strength of evidence grading table: Incredible years adaptation	47
Table 25. Keeping foster and kinship parents trained and supported: Study characteristics.....	48
Table 26. Results: Keeping foster and kinship parents trained and supported versus usual care	48
Table 27. Detailed strength of evidence grading table: Keeping foster parents trained and supported.....	49
Table 28. Nurse home visitation intervention: Study characteristics	49
Table 29. Results: Nurse home visitation intervention versus usual care.....	50
Table 30. Detailed strength of evidence grading table: Nurse home visitation intervention.....	50
Table 31. Videotape intervention: Study characteristics	51
Table 32. Results: Videotape intervention versus control videotape.....	51
Table 33. Detailed strength of evidence grading table: Videotape intervention.....	52
Table 34. Parenting interventions: Summary strength of evidence for child well-being outcomes	52
Table 35. Numbers of trials and articles investigating child well-being outcomes: Trauma-focused treatments	53
Table 36. Combined parent-child cognitive behavioral therapy: Study characteristics	54
Table 37. Results: Combined parent-child cognitive behavioral therapy versus active control....	55
Table 38. Detailed strength of evidence grading table: Combined parent-child cognitive behavioral therapy.....	55
Table 39. Eye movement desensitization and reprocessing: Study characteristics	56
Table 40. Results: Eye movement desensitization and reprocessing versus active control.....	57
Table 41. Detailed strength of evidence grading table: Eye movement desensitization and reprocessing	57
Table 42. Group psychotherapy for sexually abused girls: Study characteristics	58
Table 43. Results: Group psychotherapy for sexually abused girls versus active control.....	59
Table 44. Detailed strength of evidence grading table: Group psychotherapy for sexually abused girls	59
Table 45. Group treatment program for sexual abuse: Study characteristics	60
Table 46. KQ 1 results: Group treatment for sexual abuse versus wait list control	61
Table 47. Detailed strength of evidence grading table: Group treatment program for sexual abuse	61
Table 48. Trauma-focused cognitive behavioral therapy: Study characteristics	62

Table 49. Results: Trauma-focused cognitive behavioral therapy versus active control	63
Table 50. Results: Trauma-focused cognitive behavioral therapy group adaptation versus active control	65
Table 51. Detailed strength of evidence grading table: Trauma-focused cognitive behavioral therapy.....	66
Table 52. Trauma-focused treatments: Summary strength of evidence for child well-being outcomes	67
Table 53. Numbers of trials and articles investigating child well-being outcomes: Enhanced foster care interventions	68
Table 54. Bucharest early intervention project: Study characteristics.....	69
Table 55. Results: Bucharest early intervention project versus institutional care	70
Table 56. Detailed strength of evidence grading table: Bucharest early intervention project.....	78
Table 57. Fostering healthy futures: Study characteristics	79
Table 58. Results: Fostering healthy futures versus inactive control	80
Table 59. Detailed strength of evidence grading table: Fostering healthy futures	80
Table 60. Middle school success: Study characteristics	81
Table 61. Results: Middle school success.....	82
Table 62. Detailed strength of evidence grading table: Middle school success	83
Table 63. Multidimensional treatment foster care for preschoolers: Study characteristics	83
Table 64. Results: Multidimensional treatment foster care for preschoolers versus usual care	84
Table 65. Detailed strength of evidence grading table: Multidimensional treatment foster care for preschoolers.....	86
Table 66. Enhanced foster care interventions: Summary strength of evidence for child well-being outcomes	86
Table 67. Number of trials and articles investigating child welfare outcomes by intervention type.....	87
Table 68. Keeping foster and kinship parents trained and supported: Study characteristics.....	88
Table 69. Results: Keeping foster and kinship parents trained and supported versus usual care	89
Table 70. Detailed strength of evidence grading table: Keeping foster and kinship parents trained and supported	89
Table 71. Nurse home visitation intervention: Study characteristics	89
Table 72. Results: Nurse home visitation Intervention versus usual care	90
Table 73. Detailed strength of evidence grading table: Nurse home visitation intervention.....	90
Table 74. Parent-child interaction therapy adaptation package: Study characteristics.....	91
Table 75. Results: Parent-child interaction therapy adaptation package versus variant versus usual care	92
Table 76. Detailed strength of evidence grading table: Parent-child interaction therapy adaptation package	93
Table 77. SafeCare: Study characteristics	94
Table 78. Results: SafeCare versus usual care.....	95
Table 79. Detailed strength of evidence grading table: SafeCare.....	95
Table 80. Parenting interventions: Summary strength of evidence for child welfare outcomes ...	96
Table 81. Number of trials and articles investigating child welfare outcomes by intervention type.....	96
Table 82. Fostering healthy futures: Study characteristics	97

Table 83. Results: Fostering healthy futures versus inactive control	98
Table 84. Detailed strength of evidence grading table: Fostering healthy futures	99
Table 85. Middle school success: Study characteristics	99
Table 86. Results: Middle school success.....	100
Table 87. Detailed strength of evidence grading table: Middle school success	100
Table 88. Multidimensional treatment foster care for preschoolers: Study characteristics	100
Table 89. Results: Multidimensional treatment foster care for preschoolers versus usual care	101
Table 90. Detailed strength of evidence grading table: Multidimensional treatment foster care for preschoolers.....	101
Table 91. New Orleans intervention: Study characteristics.....	102
Table 92. Results: New Orleans intervention versus comparison groups	103
Table 93. Detailed strength of evidence grading table: New Orleans intervention	105
Table 94. Enhanced foster care: Summary strength of evidence for child welfare outcomes.....	105
Table 95. Number of trials and articles comparing the effectiveness of interventions with different characteristics	106
Table 96. Theoretical orientations: Strength of evidence for KQ 1 outcomes	107
Table 97. Total number of studies (trials and cohort studies) in KQ 4.....	109
Table 98. Strength of evidence summary table: Early childhood.....	111
Table 99. Strength of evidence summary table: Middle childhood.....	112
Table 100. Strength of evidence summary table: Early adolescence.....	113
Table 101. Strength of evidence summary table: Sex (females)	114
Table 102. Strength of evidence summary table: Neglect	115
Table 103. Strength of evidence summary table: Physical abuse.....	116
Table 104. Strength of evidence summary table: Sexual abuse.....	117
Table 105. Strength of evidence summary table: Mental or behavioral health problems	118
Table 106. Strength of evidence summary table: Maltreating parents	120
Table 107. Strength of evidence summary table: Foster or kinship parents	121
Table 108. Number of trials and articles investigating treatment engagement or retention	122
Table 109. Motivational intervention: Study characteristics	123
Table 110. Results: Motivational intervention.....	124
Table 111. Strength of evidence for treatment engagement and retention outcomes: Motivational intervention.....	125
Table 112. Number of trials and articles investigating adverse events.....	125
Table 113. Detailed strength of evidence grading table: Trauma-focused cognitive behavioral therapy.....	126
Table 114. Summary strength of evidence KQ 1 and KQ 2	129
Table 115. KQ 4 summary.....	134

Figures

Figure A. Analytic framework.....	ES-4
Figure B. Disposition of articles (PRISMA figure).....	ES-8
Figure 1. Analytic framework for comparative effectiveness of interventions for child maltreatment	17
Figure 2. Results of literature searches on interventions for child maltreatment	32

Appendixes

Appendix A. Literature Search Strategy

Appendix B. Full Text Review Form

Appendix C. Full Text Review Excludes

Appendix D. Risk of Bias Tables

Appendix E. Evidence Tables

Executive Summary

Background

Condition and Therapeutic Strategies

Child maltreatment is a global public health problem.^{1,2} In the United States alone, approximately 6.2 million children were involved in 3.4 million referrals to Child Protective Services (CPS) in FY2011.³ The prevalence of child maltreatment translates into a significant economic burden to society, cutting across many different service sectors including child welfare, health and mental care, special education, and criminal justice. A recent U.S. study estimates that the aggregate lifetime costs of nonfatal and fatal child maltreatment (in 2010 dollars) are \$124 billion.⁴ Exposure to abuse and/or neglect in childhood has serious adverse consequences across the life span, including increased risk of emotional and behavioral disturbances, delinquency and violent crime, and chronic disease.^{1,2,5-12}

This comparative effectiveness review (CER)¹³ focuses on parenting interventions, trauma-focused treatments, and enhanced foster care approaches that address child exposure to maltreatment. It is the first in a two-part series focusing on clinical (psychosocial and/or pharmacological) interventions for children exposed to traumatic experiences. The second review in the series focuses on clinical interventions with children exposed to traumatic events other than maltreatment. Both reviews were carried out under the auspices of the Agency for Healthcare Research and Quality's (AHRQ) Effective Health Care Program, the goal of which is to improve the quality, effectiveness, and efficiency of health care delivery¹⁴ with highly rigorous and transparent systematic reviews. The goal of this review is twofold: to provide stakeholders with a synthesis of the best evidence in the field of child maltreatment and to identify critical areas to address in future intervention research.

Scope and Key Questions

This review provides a critical analysis and synthesis of the comparative efficacy and effectiveness of interventions (psychosocial and pharmacological) that address child well-being and/or promote positive child welfare outcomes (safety, placement stability, and permanency) for maltreated children ages birth to 14 years. The review also examines (1) how interventions with different characteristics (modality, theoretical orientation, setting) compare in improving child outcomes, (2) how interventions compare in terms of treatment engagement and retention, and (3) adverse events associated with the interventions or comparators reviewed. The review highlights gaps in the current scientific literature and important areas for future research to build the evidence base for interventions with maltreated children. Although pharmacotherapy was included in our definition of interventions for this review, we did not identify any eligible studies for inclusion.

The inclusion and exclusion criteria for studies reviewed in this CER were defined using the PICOTS (populations, interventions, comparators, outcomes, timing, settings) framework. We call attention to several difficult exclusion decisions that were made to enhance the generalizability of the review in light of extensive clinical heterogeneity in the literature. First, we excluded studies with families broadly identified as "at risk" due to sociodemographic or other risk factors for maltreatment. The intent of this exclusion criterion was to focus the review

on children with a known maltreatment history or involvement with child protective services (CPS). Although children at risk and children with known maltreatment exposure can present similar risk and clinical profiles,¹⁵⁻¹⁷ intervention with parents involved with CPS presents markedly different therapeutic and operational challenges compared with preventive intervention with children at risk. Second, we excluded older adolescents (≥ 15 years) in recognition of the major shift in developmental needs and capacities during middle and late adolescence (e.g., autonomy, physical maturity, emphasis on peer relationships).¹⁸ In both exclusion cases, if a trial included children from the included group and the excluded group, the study was included in the review if data from the two groups could be disaggregated in data abstraction. Third, systems- or service-delivery level approaches were excluded so as to focus on “clinical-level” interventions at the child, parent, and family levels. We recognize that systems approaches, such as differential response and solution-focused casework, are well-accepted and widely used within child welfare and affect the work of related care systems. At the same time, these approaches and their evaluations were so diverse that they warranted a separate review.

We acknowledge that these exclusion decisions may have resulted in the exclusion of trials that, arguably, might bolster evidence for included interventions or support inclusion of other interventions. We also recognize these exclusions, particularly related to excluding “mixed” populations combining children at risk with children with known maltreatment or CPS involvement, may be considered a rarified approach by some. Our intent was threefold: (1) to reduce the noise of clinical heterogeneity that currently undermines the extant evidence base, (2) to maintain the rigorous approach for study inclusion that has been employed across AHRQ CERs, and (3) to avert yet more heterogeneity due to inconsistent, vague, or absent definitions of samples of children defined as at risk or an admixture of at risk and maltreated. As we attempted to follow these principles, we have striven for the utmost clarity in delineating our decisions for the reader. With these perspectives in mind, we believe that this review makes a groundbreaking contribution to the field by challenging researchers, clinicians, and policymakers to stringently assess the strength of the available evidence so as to chart clear direction for future of research.

Key Questions

This review sought to address the following key questions (KQs):

KQ 1. What is the comparative effectiveness of interventions with children exposed to maltreatment for promoting child well-being outcomes? Specifically:

- a. Mental and behavioral health (e.g., severity or number of traumatic stress symptoms or syndromes; post-traumatic stress disorder (PTSD); attachment disorders; depressive symptoms; anxiety symptoms; disruptive, aggressive, and delinquent behavior)
- b. Healthy caregiver-child relationship (e.g., secure attachment; caregiver responsiveness and sensitivity; positive parental attitudes toward childrearing; parental perceptions of the child and causal attributions about the child’s behavior; caregiver-child interactions; and family functioning)
- c. Healthy development (e.g., cognitive, language, physical maturation)
- d. School-based functioning (e.g., grade retention, disciplinary referrals, attendance)

KQ 2. What is the comparative effectiveness of interventions with children exposed to maltreatment for promoting child welfare outcomes? Specifically:

- a. Safety (i.e., prevention of maltreatment recurrence)

- b. Placement stability for children in out-of-home care
- c. Positive permanency outcomes for children in out-of-home care

KQ 3. Among the interventions under review, how do interventions with particular characteristics compare in improving child outcomes? Specifically:

- a. Modality (i.e., individual, dyadic, group, family-based format)
- b. Theoretical orientation (e.g., cognitive behavioral, psychodynamic)
- c. Type of setting (i.e., specialty or nonspecialty service-delivery settings)

KQ 4. How do interventions compare for improving child outcomes within population subgroups? Specifically:

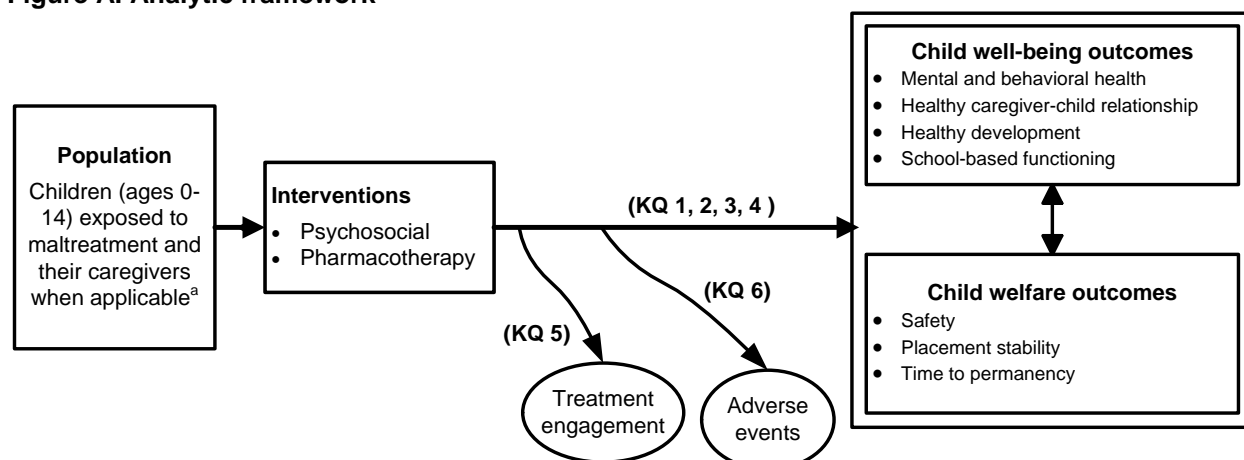
- a. Child subgroups
 - i. Age and other sociodemographic subgroups (e.g., race, ethnicity, sex)
 - ii. Type of maltreatment exposure (e.g., neglect, physical abuse, sexual abuse)
 - iii. Severity of maltreatment exposure
 - iv. Presence of mental or behavioral health problems (e.g., complex traumatic stress disorders, serious emotional disturbance) or other special needs (e.g., failure to thrive, prenatal substance exposure)
- b. Caregiver subgroups
 - i. Primary caregiving context (e.g., biological parent; foster, kin [relative], or adoptive caregivers; residential program or group home)
 - ii. Presence of mental health problems, substance abuse, or domestic violence
 - iii. Sociodemographic groups (e.g., age, race, ethnicity, sex)

KQ 5. What is the comparative effectiveness of interventions with children exposed to maltreatment for engaging children and/or caregivers in treatment (e.g., treatment adherence, treatment withdrawal)?

KQ 6. What adverse events are associated with interventions for children exposed to maltreatment (e.g., retraumatization, caregiver distress)?

The analytic framework we developed to guide the systematic review process is shown in Figure A.

Figure A. Analytic framework



^aPopulation may include the child's primary caregiver(s) when the intervention targets the caregiving context.

Methods

A team of researchers conducted this review using the methods described in AHRQ's *Methods Guide for Effectiveness and Comparative Effectiveness Reviews*.¹⁹ The team included three clinical psychologists, a family medicine physician, and a developmental psychologist all specializing in child maltreatment, as well as several researchers with expertise in AHRQ CER methodology.

Topic Refinement

The topic was nominated in a public process. With key informant input, the RTI-UNC Evidence-based Practice Center (EPC) clarified the scope of the project. After we generated an analytic framework, preliminary KQs, and preliminary inclusion/exclusion criteria in the form of PICOTS, our KQs were posted for public comment on AHRQ's Effective Health Care Web site from March 18, 2011, to April 15, 2011. We revised the KQs as needed based on review of the comments and discussion with a seven-member Technical Expert Panel (TEP), primarily for ensuring that the PICOTS aligned with the needs and understanding of the topic by stakeholders in the field. The RTI-UNC EPC incorporated public comments and guidance from the TEP into a final research protocol, which was posted on the AHRQ Web site on November 15, 2011.

Literature Search and Review Strategy

We systematically searched, reviewed, and analyzed the scientific evidence for each KQ. We conducted focused searches of MEDLINE[®] (via PubMed), Social Sciences Citation Index[®], PsycINFO[®], and the Cochrane Library. An experienced research librarian used a predefined list of search terms and medical subject headings. To ensure clinical relevancy, we limited searches to publications from 1990 and later. We also limited the search to studies published in English. We searched existing evidence-based registries and databases on interventions for children and maltreated children to identify relevant peer-reviewed articles that the systematic literature search may have missed. We also searched unpublished and grey literature relevant to the review. Methods for identifying grey literature included a review of trial registries, specifically ClinicalTrials.gov, Health Services Research Projects in Progress (www.nlm.nih.gov/hsrproj), and the European Union Clinical Trials Register (www.clinicaltrialsregister.eu). Further, AHRQ

requested Scientific Information Packets from the developers and distributors of the interventions identified in the literature review. Scientific Information Packets allow an opportunity for the intervention developers and distributors to provide the EPC with both published and unpublished data that they believe should be considered for the review. We included unpublished studies that met all inclusion criteria and contained enough information on the research methods used for the risk of bias assessment. Last, we searched the reference lists of review articles pertinent to the review but that did not meet the criteria for inclusion.

Trained reviewer pairs independently evaluated each of the titles and abstracts. For each article that either or both reviewers chose to include from the abstract review, two reviewers reviewed their full texts for eligibility against our PICOTS (Table A) and study design eligibility criteria (i.e., systematic reviews, randomized controlled trials, nonrandomized controlled trials, cohort studies, and case-control studies; $N > 10$). During full-text review, if both reviewers agreed that a study did not meet the eligibility criteria, the study was excluded. Reviewers resolved conflicts by discussion and consensus or by consulting a third member of the review team.

Table A. Population, Intervention, Comparator, Timing, Setting (PICOTS)

Domain	Description
Population	<ul style="list-style-type: none"> Children aged 0 to 14 years exposed to child maltreatment. For this review, we used the definition of maltreatment provided by the Centers for Disease Control and Prevention:²⁰ <ul style="list-style-type: none"> Child abuse: words or overt actions that cause harm, potential harm, or threat of harm to a child Child neglect: failure to provide for a child's basic physical, emotional, or educational needs or to protect a child from harm or potential harm; privation (conditions of severe social deprivation). Children aged 0 to 14 whose families were involved with child protective services, including children who remained in the care of their biological parent and those placed in out-of-home care (e.g., foster care, kinship care, group home care). We excluded studies that targeted children known to have been placed in out-of-home care because the child's behavior or condition posed a threat to their community or was beyond the control of his or her family (e.g., youth referred or mandated by the juvenile justice system to out-of-home placement because of multiple criminal offenses; children placed in out-of-home care due to serious emotional disturbance and no involvement with the child protective services). The population included the child's primary caregiver(s) when the intervention targeted the caregiving context. The primary caregiver was defined as the biological parent; foster, kinship (relative), or adoptive caregiver; or caregivers in a residential program or group home. Child subgroups were defined by age, type of maltreatment exposure, severity of maltreatment exposure, presence of child behavioral and mental health problems, and sociodemographic groups (race, ethnicity, and sex). Caregiver subgroups were defined as caregiving context (i.e., primary caregiver/environment), presence of caregiver substance abuse or other mental health disorder, caregiver sociodemographic characteristics (age, race, ethnicity, and sex).
Interventions	<p>Clinical interventions designed to prevent, ameliorate, or improve mental health symptoms, behavior problems, or psychopathology; optimize child development and functioning; and/or improve child welfare outcomes, including the following:</p> <ul style="list-style-type: none"> Psychotherapy/psychosocial interventions delivered at the individual, caregiver, and/or family level (including Trauma-Focused Cognitive Behavioral Therapy, Parent-Child Interaction Therapy, Attachment and Biobehavioral Catch-up, the Incredible Years). General and specific types of pharmacotherapy (e.g., selective serotonin reuptake inhibitors [SSRIs]). <p>Strategies or approaches designed to improve the system of care for maltreated children and caregivers at the service-delivery or organizational level were excluded. Examples include intensive family preservation or reunification service models, solution-focused/based casework, differential response, and routine preservice foster parent training programs.</p>

Table A. Population, Intervention, Comparator, Timing, Setting (PICOTS) (continued)

Domain	Description
Comparator	The comparison condition as defined in the respective studies. Active controls were comparison groups that received another structured intervention. Inactive controls were comparison groups that did not receive another structured intervention
Outcomes	<p>Child well-being outcomes</p> <ul style="list-style-type: none"> • Child mental and behavioral health (e.g., prevention of or reduction in severity or number of traumatic stress symptoms or syndromes; post-traumatic stress disorder (PTSD); attachment disorders; depressive symptoms; anxiety symptoms; disruptive, aggressive, and delinquent behavior) • Healthy caregiver-child relationship (e.g., secure attachment; increased caregiver responsiveness and sensitivity to the child; positive caregiver-child interaction; increased positive attitudes toward childrearing, perceptions of the child and causal attributions about the child's behavior, family functioning) • Healthy development (e.g., cognitive, language, physical) • School-based functioning (e.g., grade retention, disciplinary referrals, attendance) <p>Child welfare outcomes</p> <ul style="list-style-type: none"> • Safety (e.g., prevention of maltreatment recurrence or reduced number of subsequent involvements with child protective services) • Placement stability for children in out-of-home care • Positive permanency outcomes for children in out-of-home care <p>Treatment engagement and adherence</p> <ul style="list-style-type: none"> • Readiness or motivation to engage in an intervention • Treatment completion <p>Adverse events</p> <ul style="list-style-type: none"> • Retraumatization • Caregiver distress
Timing	<ul style="list-style-type: none"> • Short-term duration: postintervention (i.e., at treatment completion) to <6 months • Long-term duration: ≥6 months after treatment completion
Setting	<ul style="list-style-type: none"> • Studies conducted in the United States or internationally • Interventions provided in both specialty service delivery settings (e.g., outpatient and inpatient mental health care settings) and nonspecialty service delivery settings (e.g., schools, community-based providers, shelters, prison or diversion programs) • Home-based and out-of-home care (e.g., foster or kin care, residential treatment, group settings)

Risk of Bias Assessment of Individual Studies

For each included study, we assessed the potential for selection bias, performance bias, attrition bias, detection bias, confounding, and reporting bias (see Table A). Teams of two independent reviewers rated the risk of bias for each study. Disagreements between the two reviewers were resolved by discussion and consensus or by consulting a third member of the team.

Results of this assessment are encapsulated in a rating of low, medium, or high risk of bias. In general, a study with a low risk of bias has a strong design, measures outcomes appropriately, uses appropriate statistical and analytical methods, reports low attrition, and describes methods and outcomes clearly and precisely. Studies with a medium risk of bias are those that do not meet all criteria required for low risk of bias but do not have flaws that are likely to cause major bias.

Studies with a high risk of bias include those with at least one major weakness that has the potential to cause significant bias and undermine confidence in the validity of results. Examples of flaws leading to a high risk of bias rating include differences in groups at baseline, high overall attrition, or substantial differential attrition across study conditions. A high risk of bias rating was not assigned to a study merely because critical information was not reported or unclear.²¹ However, “unclear” methodology was taken into consideration in grading the strength

of evidence based on the study (described below). To maintain a focus on the best available evidence, studies with a high risk of bias are not included in the results.

Data Synthesis

We report results from direct comparisons of different interventions in the form of a qualitative synthesis. We did not conduct a quantitative meta-analysis because of issues related to heterogeneity, insufficient numbers of similar studies, and insufficiency or variation in outcome reporting. We report magnitude of effect data as provided by authors in the studies reviewed. We did not perform additional effect size calculations, with the exception of one study that provided the effect size without the significance level.²²

Strength of Evidence Grading

We graded the strength of evidence for child well-being outcomes (KQ 1), child welfare outcomes (KQ 2), interventions with different characteristics (KQ 3), subpopulations (KQ 4), and adverse events (KQ 5) on the basis of guidance established for the EPC program.²³ This approach incorporates four key domains: risk of bias (including study design and aggregate quality), consistency, directness, and precision of the evidence.

Two reviewers assessed each domain independently and also assigned an overall grade for each key outcome listed in the framework; they resolved any conflicts through consensus discussion. If a consensus was not met, the team brought in a third reviewer to settle the conflict. We used the strength of evidence grades defined by Owens and colleagues:²³

- **High—High confidence that the evidence reflects the true effect.** Further research is very unlikely to change our confidence in the estimate of effect.
- **Moderate—Moderate confidence that the evidence reflects the true effect.** Further research may change our confidence in the estimate of the effect and may change the estimate.
- **Low—Low confidence that the evidence reflects the true effect.** Further research is likely to change our confidence in the estimate of the effect and is likely to change the estimate.
- **Insufficient—Evidence either is unavailable or does not permit estimation of an effect.**

Applicability

We assessed the applicability of the evidence following guidance from Atkins and colleagues.²⁴ We used the PICOTS framework to explore factors that affect or limit applicability.

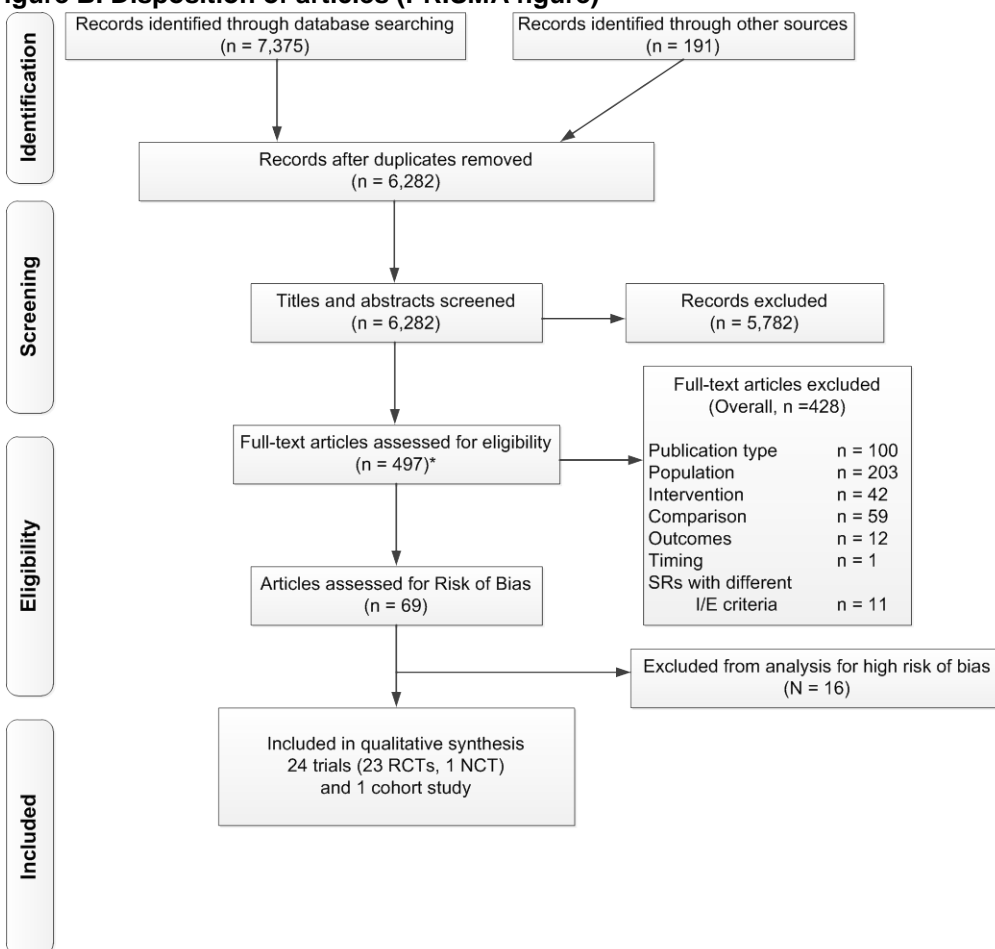
Results

We provide a summary of results by key question. KQs 1 and 2 synthesize the evidence by type of intervention. KQ 3 synthesizes the evidence by intervention characteristics, and KQ 4 synthesizes the evidence for child and caregiver population subgroups. KQ 5 summarizes the evidence for the one trial that was identified addressing treatment engagement and retention. KQ 6 summarizes the evidence for the one trial that was identified that addressed adverse events. Detailed descriptions of included studies, key points, detailed synthesis, summary tables, and expanded strength of evidence tables that include the magnitude of effect can be found in the full report. Our summary of results tables below present the strength of evidence grades for each KQ.

Results of Literature Searches

Figure B presents our literature search results. Literature searches through May 4, 2012, for the current report identified 6,282 unduplicated citations. We excluded 5,782 records at the title and abstract review stage. For the 497 articles reviewed at the full-text stage, we eliminated 428. A table of all excluded studies, organized by reason for exclusion, is provided in Appendix C. The most common reasons for exclusion at the full text level were (1) the study included children outside of the target age range (0 to 14) without stratification by age or the study's focus was on children at risk for abuse or neglect without known CPS involvement; (2) systems-level approaches (wrong intervention); or (3) lack of a comparison group (wrong comparison). After assessing risk of bias for all included studies (before data abstraction), we eliminated studies that we rated high risk of bias. This process left a total of 25 studies, reported in 53 articles with outcomes assessed as either medium or low risk of bias.

Figure B. Disposition of articles (PRISMA figure)



*we were unable to access the FT of three articles

Abbreviations: I/E = inclusion/exclusion; NCT = nonrandomized controlled trial; RCT – randomized controlled trial

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(6): e1000097. doi:10.1371/journal.pmed1000097

For more information, visit www.prisma-statement.org.

Key Question 1. Comparative Effectiveness of Interventions for Improving Child Well-Being Outcomes

The summary of results for KQ 1 is presented in Table B (see below). We included a total of 21 trials (19 efficacy and 2 effectiveness trials^{25,26}) that included 1 nonrandomized controlled trial.²⁷ With the exception of one intervention, the body of evidence for interventions that addressed child well-being in maltreated children was predominantly low strength of evidence or was insufficient to draw conclusions. Low strength of evidence was largely attributable to most bodies of evidence consisting of only one trial, many with small sample sizes. We applied a moderate strength of evidence grade for mental and behavioral health and caregiver-child relationship outcomes for only one intervention, evaluated in an effectiveness trial: a brief foster parent training program called Keeping Foster Parents Trained and Supported (KEEP).²⁵ We found no eligible studies that assessed school-based functioning, an anomaly given the pervasive emphasis on school readiness and performance in the U.S. educational system.

Key Question 2. Comparative Effectiveness of Interventions for Improving Child Welfare Outcomes

The summary of results for KQ 2 is presented in Table B. We included a total of 9 trials in KQ 2: 4 large effectiveness trials,^{26,28-30} (including 2 large effectiveness trials^{29,30}) 4 efficacy trials, and 1 nonconcurrent cohort study.²² With the exception of two interventions,^{29,30} the body of evidence for interventions that addressed child welfare outcomes was predominantly low strength of evidence or was insufficient to draw conclusions. We found moderate strength of evidence for two interventions: a home-visiting approach with maltreating parents (SafeCare)²⁹ and the foster parent training program, KEEP.³⁰ Only one intervention (Parent-Child Interaction Therapy combined with a motivational intervention) was assessed in more than one trial.^{28,31}

Table B. Summary strength of evidence for Key Questions 1 and 2

Type	Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence; Magnitude of Effect
Parenting Interventions	Attachment and Biobehavioral Catch-up	Active control ^a	Mental and behavioral health	2, ³²⁻³⁵ 213	Low, G1>G2; NR
			Healthy caregiver-child relationship	2, ^{36,37} 166	Low, G1>G2; NR
			Healthy development	1, ³⁸ 37	Low, G1>G2; NR
		Wait list	Mental and behavioral health	1, ³⁹ 58	Low, G1>G2; medium (partial eta squared=0.436 or 0.511)
			Healthy caregiver-child relationship	1, ³⁹ 58	Low, G1>G2; medium or large (partial eta squared=0.59 or 0.791)
	Attachment-Based Intervention	Usual care	Mental and behavioral health	1, ⁴⁰ 79	Insufficient
			Healthy caregiver-child relationship	1, ⁴⁰ 79	Low, G1>G2; small to medium (d=0.47, r=0.36 or 0.37)
	Child-Parent Psychotherapy ^b	Active control ^a	Healthy caregiver-child relationship	2, ^{41,42} 159	Insufficient
		Usual care	Healthy caregiver-child relationship	2, ^{41,42} 141	Low, G1>G2; medium to large (h=0.64 to 1.34)

Table B. Summary strength of evidence for Key Questions 1 and 2 (continued)

Type	Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence; Magnitude of Effect
Parenting Interventions (continued)	Incredible Years Adaptation	Usual care	Mental and behavioral health	1, ⁴³ 64	Insufficient
			Healthy caregiver-child relationship	1, ⁴³ 64	Low, G1>G2; small to medium (d=0.40 or 0.59)
	Keeping Foster and Kinship Parents Trained and Supported	Usual care	Mental and behavioral health	1, ²⁵ 700	Moderate, G1>G2; small (d=0.26)
			Healthy caregiver-child relationship	1, ²⁵ 700	Moderate, G1>G2; small (d=0.29)
			Placement stability	1, ³⁰ 700	Insufficient
			Permanency	1, ³⁰ 700	Moderate, G1>G2; NR
	Nurse-Home Visitation Intervention	Usual care	Mental and behavioral health	1, ²⁶ 163	Insufficient
			Healthy caregiver-child relationship	1, ²⁶ 163	Insufficient
			Safety	1, ²⁶ 163	Insufficient
	PCIT Adaptation Package	PCIT Adaptation Package Enhanced ^c	Safety	1, ³¹ 75	Insufficient
		Usual care	Safety	2, ^{28,31} 153	Low, G1>G2; NR ^d
Trauma-Focused Treatments	PCIT Adaptation Package Enhanced ^c	Usual care	Safety	1, ³¹ 88	Insufficient
	SafeCare	Usual care	Safety	1, ²⁹ 2175	Moderate, G1>G2; HR=0.74 to 0.83
	Videotape Intervention	Control videotape	Mental and behavioral health	1, ⁴⁴ 30	Insufficient
	Combined Parent-Child Cognitive Behavioral Therapy	Active control ^a	Mental and behavioral health	1, ⁴⁵ 75	Low, G1>G2; medium (d=0.61)
			Healthy caregiver-child relationship	1, ⁴⁵ 75	Insufficient
	Eye Movement Desensitization and Reprocessing	Active control ^a	Mental and behavioral health	1, ⁴⁶ 14	Insufficient
	Group Psychotherapy for Sexually Abused Girls	Active control ^e	Mental and behavioral health	1, ⁴⁷ 71	Low, G1<G2; small to medium (d=0.36 to 0.79)
	Group Treatment Program for Sexual Abuse	Inactive control	Mental and behavioral health	1, ²⁷ 30	Low, G1>G2; NR
	Trauma-Focused Cognitive Behavioral Therapy	Active control ^f	Mental and behavioral health	2, ^{48,49} 315	Low, G1>G2; small to medium (d=0.30 to 0.70)
			Healthy caregiver-child relationship	1, ⁴⁸ 229	Low, G1>G2; small to medium (d=0.38 or 0.57)

Table B. Summary strength of evidence for Key Questions 1 and 2 (continued)

Type	Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence; Magnitude of Effect
Enhanced Foster Care Interventions	Trauma-Focused Cognitive Behavioral Therapy Group Adaptation	Active control ^e	Mental and behavioral health	1, ⁵⁰ 44	Insufficient
			Healthy caregiver-child relationship	1, ⁵⁰ 44	Insufficient
	Bucharest Early Intervention Project	Usual care (institutional care in Romania)	Mental health and behavior	1, ⁵¹⁻⁵⁵ 136	Low, G1>G2; OR 2.8 [95% CI, 1.2 to 6.4]
			Healthy caregiver-child relationship	1, ^{54,56,57} 136	Low, G1>G2; NR
			Healthy development	1, ⁵⁷⁻⁶³ 136	Low, G1>G2; effect size ^g =0.47 or 0.62
	Fostering Healthy Futures	Inactive control	Mental and behavioral health	1, ⁶⁴ 156	Low, G1>G2; small to medium (d=0.30 to 0.51)
			Placement stability	1, ⁶⁵ 110	Low, G1>G2; OR=0.18 to 0.56
			Permanency	1, ⁶⁵ 110	Low, G1>G2; OR=5.14
	Middle School Success	Usual care	Mental health and behavior	1, ^{66,67} 100	Low, G1>G2; small to medium (d=0.35 to 0.57)
			Placement stability	1, ⁶⁶ 100	Low, G1>G2; medium (d=0.50)
	Multi-dimensional Treatment Foster Care for Preschoolers	Usual care	Mental health and behavior	1, ^{68,69} 117	Low, G1>G2; medium (d=0.64 to 0.68)
			Healthy caregiver-child relationship	1, ^{70,71} 117	Low, G1>G2; NR
			Healthy development	1, ⁷² 23	Low, G1>G2; NR
			Placement stability	1, ⁷³ 117	Insufficient
			Permanency	1, ^{74,75} 90	Low, G1>G2; NR
	New Orleans Intervention	Usual care	Safety	1, ²² 255	Low, G1>G2; RRR=0.67 to 0.75
			Permanency	1, ²² 240	Low, G1<G2; NR

^aActive comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

^bIntervention is a variant of relationship-based dyadic psychotherapy as developed and manualized by Cicchetti and colleagues.^{41,42}

^c“Enhanced” refers to the provision of individualized services, such as adult mental health treatment and marital counseling, to the parents.

^dChaffin et al., 2011,²⁸ reports a hazard ratio but it is not statistically significant (i.e. reported as a trend).

^eActive comparator is an approach representative of a conventional practice in the field.

^fOne comparator is a conventional approach; the other is a derived approach.

^gEffect size measure is not specified; therefore, we did not classify the magnitude of effect as small, medium, or large.

Note: Table is organized alphabetically by intervention name. For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen’s *d* = 0.20, 0.50, and 0.80; Cohen’s *h* = 0.20, 0.50, and 0.80; and correlation coefficient *r* = 0.10, 0.30, and 0.50, respectively.⁷⁶ When authors use eta or partial eta squared effect sizes, we use the interpretation that the authors provide.^{39,77} We include an effect size range when more than two effect sizes are reported.

Abbreviations: CI = confidence interval; G = group; NR = not reported; OR = odds ratio; PCIT = Parent-Child Interaction Therapy; RRR = relative risk reduction.

Key Question 3. Comparative Effectiveness of Interventions With Different Characteristics

We found no studies that compared the efficacy or effectiveness of interventions delivered in different settings. We also found no studies in which the design or methods clearly indicated that

modality (i.e., service delivery format) was a comparison of interest. Our team carefully avoided excessive interpretation to make a study “fit” with this KQ.

Regarding theoretical orientation, meaningful contrasts were elusive. Our a priori focus on theoretical orientation was intended to identify studies with interventions that clearly ascribed to a particular orientation and not to elevate treatments with a unifying theory over multiply determined approaches. It was difficult to infer a particular orientation and interpret results comparing eclectic approaches. Even when a treatment ascribed to a primary theory, rarely did an intervention adhere exclusively to that theory or related intervention strategies. Some “borrowed” facets of various orientations; others balanced one or more perspectives.

Additionally, many studies did not fully describe the key components of their interventions, making it difficult to know what actually occurred within treatment sessions and whether the therapist’s actions corresponded to the purported theory.

Thus, we were able to identify three trials reported for which the driving theoretical orientation(s) were clearly differentiated or explained across the experimental and control conditions: Attachment and Biobehavioral Catch-up was compared with a didactic, nonrelationship-based approach,³²⁻³⁸ and Trauma-Focused Cognitive Behavioral Therapy⁴⁸ was compared with psychodynamic child-centered treatment. Each trial showed benefit in favor of the experimental intervention.

Key Question 4. Comparison of Intervention Effectiveness for Improving Child Well-Being or Child Welfare Outcomes in Population Subgroups

Table C presents the summary of results for KQ 4. The results are a listing of interventions that showed low or moderate strength of evidence for KQ 1 or KQ 2 outcomes by subgroups.

As noted earlier, our Key Questions specified other salient child and caregiver characteristics as subgroups to examine in KQ 4; however, we identified no eligible studies for these additional areas. A number of studies excluded parents with active substance abuse or mental illness and children with documented developmental disabilities. It was particularly notable that we could not identify studies for inclusion in this KQ that attended to race or ethnicity, given the attention to racial and ethnic disparities in the child welfare arena.

Table C. Key Question 4 summary

Subgroup/Intervention (G1)	Comparison (G2)	Mental and Behavioral Health	Caregiver-Child Relationship	Development	Safety	Placement Stability	Permanency
Age: Early Childhood	-	-	-	-	-	-	-
Attachment and Biobehavioral Catch-up	Active control	L G1>G2	L G1>G2	L G1>G2	-	-	-
Attachment and Biobehavioral Catch-up	Inactive control	L G1>G2	L G1>G2	-	-	-	-
Attachment-Based Intervention	Usual care	-	L G1>G2	-	-	-	-
Bucharest Early Intervention Project	Usual care ^a	L G1>G2	L G1>G2	L G1>G2	-	-	-
Child-Parent Psychotherapy	Usual care	-	L G1>G2	-	-	-	-
Multidimensional Treatment Foster Care for Preschoolers	Usual care	L G1>G2	L G1>G2	L G1>G2	-	L G1>G2	-
New Orleans Intervention	Usual care	-	-	-	L G1>G2	-	L G1<G2
SafeCare	Usual care	-	-	-	M G1>G2	-	-
Age: Middle Childhood	-	-	-	-	-	-	-
Fostering Healthy Futures	Inactive control	L G1>G2	-	-	-	L G1>G2	L G1>G2
Age: Early Adolescence	-	-	-	-	-	-	-
Middle School Success	Usual care	L G1>G2	-	-	-	L G1>G2	-
Sex: Females	-	-	-	-	-	-	-
Group Psychotherapy for Sexually Abused Girls	Active control	L G1>G2	-	-	-	-	-
Group Treatment Program for Sexual Abuse	Inactive control	L G1>G2	-	-	-	-	-
Type of Maltreatment: Neglect	-	-	-	-	-	-	-
Bucharest Early Intervention Project	Usual care ^a	L G1>G2	L G1>G2	L G1>G2	-	-	-
SafeCare	Usual care	-	-	-	M G1>G2	-	-
Type of Maltreatment: Physical Abuse	-	-	-	-	-	-	-
Combined Parent-Child Cognitive Behavioral Therapy	Active control	L G1>G2	-	-	-	-	-
Parent-Child Interaction Therapy Adaptation Package	Usual care	-	-	-	L G1>G2	-	-
Type of Maltreatment: Sexual Abuse	-	-	-	-	-	-	-
Group Psychotherapy for Sexually Abused Girls	Active control	L G1>G2	-	-	-	-	-
Group Treatment Program for Sexual Abuse	Inactive control	L G1>G2	-	-	-	-	-
Trauma-Focused Cognitive Behavioral Therapy	Active control	L G1>G2	L G1>G2	-	-	-	-

Table C. Key Question 4 summary (continued)

Subgroup/Intervention (G1)	Comparison (G2)	Mental and Behavioral Health	Caregiver-Child Relationship	Development	Safety	Placement Stability	Permanency
Presence of Mental or Behavioral Problems	-	-	-	-	-	-	-
Combined Parent-Child Cognitive Behavioral Therapy	Active control	L G1>G2	-	-	-	-	-
Group Psychotherapy for Sexually Abused Girls	Active control	L, G1<G2	-	-	-	-	-
Group Treatment Program for Sexual Abuse	Inactive control	L G1>G2	-	-	-	-	-
Trauma-Focused Cognitive Behavioral Therapy	Active control	L G1>G2	L G1>G2	-	-	-	-
Caregiving Context: Maltreating Parent	-	-	-	-	-	-	-
Attachment and Biobehavioral Catch-up	Active control	L G1>G2	L G1>G2	-	-	-	-
Attachment-Based Intervention	Usual care	-	L G1>G2	-	-	-	-
Child-Parent Psychotherapy	Usual care	-	L G1>G2	-	-	-	-
Combined Parent-Child Cognitive Behavioral Therapy	Active control	L G1>G2	-	-	-	-	-
New Orleans Intervention	Usual care	-	-	-	L G1>G2	-	L,G1<G2
Parent-Child Interaction Therapy Adaptation Package	Usual care	-	-	-	L G1>G2	-	-
SafeCare	Usual care	-	-	-	M G1>G2	-	-
Caregiving Context: Foster Parent	-	-	-	-	-	-	-
Attachment and Biobehavioral Catch-up	Active control	L G1>G2	L G1>G2	L G1>G2	-	-	-
Attachment and Biobehavioral Catch-up	Inactive control	L G1>G2	L G1>G2	-	-	-	-
Bucharest Early Intervention Project	Usual care ^a	L G1>G2	L G1>G2	L G1>G2	-	-	-
Keeping Foster and Kinship Parents Trained and Supported	Usual care	M G1>G2	M G1>G2	-	-	-	M G1>G2
Middle School Success	Usual care	L G1>G2	-	-	-	L G1>G2	-
Multidimensional Treatment Foster Care for Preschoolers	Usual care	L G1>G2	L G1>G2	L G1>G2	-	L G1>G2	-

Abbreviations: G = group; L = low; M = moderate.

Key Question 5. Comparative Effectiveness of Interventions With Children Exposed to Maltreatment for Engaging Children and/or Caregivers in Treatment

We identified one trial in the literature relevant to KQ 5 that assessed the comparative effectiveness of a motivational intervention designed to increase maltreating parents' engagement and retention in a dyadic parenting intervention (Parent-Child Interaction Therapy,

PCIT). PCIT combined with the motivational intervention yielded increased intervention engagement and retention relative to those assigned to receive PCIT with the standard CPS orientation. This finding pertaining to the impact of the motivational intervention on treatment engagement and retention was graded as having a moderate strength of evidence due to the size of the study and because it was an effectiveness trial. The PCIT-motivational intervention trial is notable both because of its strength of evidence and in light of the paucity of comparative research on treatment engagement and retention.

Key Question 6. Adverse Events Associated With Interventions for Children Exposed to Maltreatment

We included a KQ examining adverse events because there is the potential for harms, even temporary, associated with treatment of children exposed to maltreatment. Such harms may take the form of retraumatization associated with gradual exposure or caregiver distress resulting from an increased awareness of harm to a child exposed to abuse and neglect experiences. Only two trials reported an incident that the authors classified as an adverse event. Of those trials, only one reported active surveillance of adverse events, which was the inclusion criterion for KQ 6. This trial assessed the comparative efficacy of Trauma Focused-Cognitive Behavioral Therapy (TF-CBT) and nondirective supportive therapy (active control) for sexually-abused preschoolers. Fewer children in TF-CBT experienced the adverse event of removal from treatment because of persistent sexually inappropriate behavior involving another child or adult (low SOE).

Discussion

Key Findings and Strength of Evidence

Overall, the evidence from 24 trials (23 randomized and 1 nonrandomized controlled trial) and one cohort study (reported in 53 articles) included in this CER provides preliminary support for a number of promising approaches for addressing child exposure to maltreatment. Approaches varied in treatment target, intensity, modality, and theoretical conceptualizations of therapeutic change. With the exception of two interventions, KEEP and SafeCare, the body of evidence for interventions that addressed child well-being or child welfare outcomes in maltreated children was predominantly low strength of evidence or was insufficient to draw firm conclusions.

Our review illuminates major substantive and methodological gaps in the evidence and highlights critical areas for future research. To be fair, these gaps reflect the relatively new field of evidence-based mental health treatment provided in the context of the myriad and complex challenges of caring for maltreated children, engaging and retaining maltreating parents in treatment, and working within the parameters of the child welfare arena. Head-to-head studies are scarce, as are multiple or independent (i.e., tested by researchers unaffiliated with intervention developers) trials. Sample sizes are commonly very small. A major gap in the literature with implications for widespread implementation is the issue of “dose” or how much of an intervention is needed to affect change. None of the included studies addressed this issue. With the exception of studies involving younger children, few interventions were designed for or studied efficacy or effectiveness within specific age or developmental ranges. Similarly, studies rarely took into consideration or elucidated findings as they related to maltreatment type, severity, chronicity, timing, and exposure to other traumatic experiences. Also underrepresented in the literature were studies about interventions that explicitly evaluated efficacy or

effectiveness with the most vulnerable and challenging-to-serve families; that is, maltreated children whose parents were struggling with issues such as substance abuse, domestic violence, and mental illness. For feasibility issues, such families were commonly excluded from a study sample.

Implications for Clinical Practice

For clinicians, the stringent criteria of this CER may raise questions about its applicability for typical practice settings such as community mental health agencies, health centers, schools, and private practices. Although there has been a groundswell of support for using evidence-based treatments, they are relatively new models that often are unfamiliar to a community practitioner. Clinicians may have relatively few intervention options meeting the criteria for greater strength of evidence described in this report. Even so, the findings presented here may encourage clinicians to consider the relative evidence for one or another approach in a given clinical context and in their treatment decisions. The interventions highlighted as benefiting mental and behavioral health, caregiver child relationships, child development, and child welfare status represent treatment selection priorities. Studies that were included yet found to have lesser scientific support may be second-line options or represent best available options for given predisposing maltreatment events or certain clinical presentations.

We recognize that providers may turn to other interventions. The selection criteria in this review may still guide that process. Clinicians may consider the extent to which their clientele are reflected in studies of a particular intervention (i.e., sample representativeness), the relevance of study outcomes (i.e., applicability), and the extent to which they are able to adopt a practice with strong attention to fidelity. In light of the limited evidence base for efficacious or effective interventions, this report may also heighten attention in the field to adoption and effective implementation of a new practice; successful implementation depends on clinical training that is supported by adherence to a clear treatment manual, ongoing consultation in model application to clinical practice, and practice that is guided by an expert provider and trainer.⁷⁸ Outcome findings in this review may assist clinicians to fine-tune outcomes to be expected from a particular approach, modality, or level of care. On the basis of this refined knowledge, expectations may be communicated to clients to facilitate engagement and positive, realistic expectations for change. These implications are steps toward improving the relevance of research to therapists and other providers, which is critical if standards of care are to improve rather than remain static.

Implications for Policy

This report presents highly specific research that may not correspond readily to practices in real-world community settings. The two approaches for which there was strongest evidence based on effectiveness studies^{25,29,30} were each tested in only one trial, and the SOE for most interventions included in this review was low. Given the early stage of research in the field, we caution that this report should not be taken as a guide to the selection of specific approaches for wider dissemination. Rather, the central finding of this review for policymakers and payers is the relative scarcity of evidence to guide the field in meeting the needs of this vulnerable population of children.

Two implications for policymakers are immediately evident. First, there is an urgent need for collaborative clinical trials to move the field of child maltreatment intervention research forward. A multisite clinical research network is a powerful platform that could efficiently furnish

collaborative studies of sufficient quality and size to build a stronger evidence base for effective practice. The National Child Traumatic Stress Network offers an existing infrastructure that could be expanded to support and provide scientific leadership for collaborative multisite trials. Alternatively, or in addition, an existing clinical research network could be expanded or a new network formed to focus on child maltreatment intervention. Such initiatives will, in many respects, require a paradigm shift in funding to prioritize and adequately support complex research endeavors over single-site, small studies conducted by treatment developers or single research groups. It will also require a recalibration of timeframe expectations for study implementation with vulnerable populations and the creation of flexible funding mechanisms that seamlessly support the trajectory from efficacy to translation for rigorously examined interventions that show consistent, robust effects.

A second area where policymakers can have a major positive impact is in incentivizing higher quality program and administrative data that will both serve research needs and drive data-informed decision-making at the program and clinical levels. Program-record databases typically collect the minimal information pertinent to billing or other administrative needs and not necessarily case-outcome data. Field agencies that must compete for limited dollars to support their programs are rarely able to focus on systematic data or participate readily in rigorous research activities. The collection of implementation and outcome data is rarely incentivized within an agency or practice or in the form of enhanced payment rates from insurers. The end result, in a context of dwindling resources to support the cost of providing quality care, is disincentive for programs to engage in activity beyond what is specifically reimbursed.

Applicability

The evidence base primarily reflects two related contingents of maltreated children: those for whom child welfare involvement or custody represents a proxy for maltreatment, and those for whom maltreatment is concluded through clinical assessment. Each of the two approaches is subject to false negative conclusions, but at a broad level they together reflect the target population of children exposed to maltreatment. Among the studies evaluating parenting interventions with maltreating parents, exclusion criteria may have affected the applicability of the findings in important ways. These exclusion criteria encompass parents unwilling to participate in the intervention and study, those with active substance use or abuse, those with psychiatric impairment (e.g., severe depression, psychosis), and those affected by a cognitive or neurological disability. Because these population characteristics represent baseline risks that are prevalent in the target population,⁷⁹ particularly maternal depression,^{80,81} the applicability of the evidence to the complex presentations encountered in clinical settings is somewhat limited.

The evidence base reflects the diverse range of intervention approaches in the field, which vary considerably in intensity. Those interventions with lower intensity (≤ 12 weekly sessions or approximately 3 months in duration) or moderate intensity (13 to 24 weekly sessions or approximately 6 months in duration) may fit well with the structural needs and expectations encountered in child welfare systems operating under the strict timeline set for permanency planning under the Adoption and Safe Families Act.⁸² Most studies delivered the intervention of interest under conditions more favorable than encountered in community settings. The discrepancy appeared most salient in terms of provider qualifications, as those in the experimental conditions tended to receive specialized training and close supervision from a highly specialized clinician, often the intervention developer.

More than half of the comparisons in the evidence base evaluated the efficacy or effectiveness of the intervention against an active control. Of these, 36 percent represented conventional practices in the field, and 64 percent represented derivations of other approaches. The derived approaches made assessment of applicability difficult because it was not clear whether they reflected the best alternative treatments in the field. On the contrary, in several cases the comparator was a modified version of an original model for which evidence of effectiveness exists in the scientific literature or did not appear to maintain core components of the original model with fidelity (the case in five trials).^{32-38,41,42,46} The derived approaches also included two that were developed to control for nonspecific aspects of the experimental intervention. As newly developed interventions, the extent to which each represented a “best” alternative treatment could not be determined.

The child welfare outcomes reported in the included studies were based on data drawn primarily from child welfare agency records. This approach may offer important insights into the integration of treatment into child welfare systems but only to the extent that records objectively, accurately, and consistently report the relevant variables within a system and across regions and states. The duration of followup to assess maltreatment recurrence (i.e., safety) was variable across studies, making it somewhat difficult to apply the findings to the already complex recurrence data in the State Child and Family Service Reviews (the data used by the Federal government to monitor State child welfare programs in meeting safety, permanency, and family and child well-being outcomes).

Research Gaps

We identified a number of important gaps in the evidence for the CER. At a broad level, studies rarely distinguished themselves as either efficacy or effectiveness trials. Power analyses were seldom presented; this finding speaks to a serious issue in the field that contributes to variability in definitions of evidence-based practice and understanding of when practices are ready for dissemination.⁸³ At the level of intervention, studies infrequently undertook head-to-head comparisons with named active treatments; also, studies that used a usual care comparator varied widely in the definition and content of usual care. Overall, the active control treatments varied widely within and across studies and often lacked a clear treatment rationale and specificity about procedures. Such variations, particularly when unlabeled and untested for efficacy, make it difficult to arrive at conclusions regarding comparative effectiveness. Regarding “usual care” or “services as usual” as the control intervention, which was the case for the majority of studies reviewed, no standard exists for this type of control group in the field. Thus, usual care as the control represented a problematic comparator insofar as it is an ill-defined concept.

Also, the definition of maltreatment presented a major challenge. Many of the included studies define maltreatment in terms of a child’s involvement with CPS or substantiation of alleged abuse. However, identification of child symptomatology was inconsistent across studies. Typically, an intervention was based on an event (maltreatment or involvement with CPS), rather than symptomatic or functional impairment. Additionally, studies were often vague about their own inclusion criteria, which influenced our decision to restrict the review to children who had a reasonably clear history of maltreatment and to exclude at-risk or mixed populations that posed further definitional challenges. We did not encounter any study that stratified findings by children at risk or with known exposure. Many studies did not provide specific information about the type and number of events, timing, chronicity, context of children’s maltreatment, or any co-

occurrence of other potentially traumatic events. We recognize that CPS records and clinical assessment protocols are subject to inaccuracy, misidentification, and omission errors; both are only as accurate as the information that has observed, reported, or inferred.

Many studies exceeded our criteria for risk of attrition bias: total study attrition above 30 percent or differential attrition between the active treatment and control groups greater than 15 percent.⁸⁴ We excluded several trials that admirably followed participants over a longer period (e.g., greater than 1 year) because too many of the participants were missing from the analysis of followup data.⁸⁵⁻⁹⁰

In some cases, we excluded outcomes or studies that reported only relevant outcomes assessed using measures without well-established reliability and validity. We required that outcome measures offer more than face or construct validity.

Although many studies compared baseline characteristics across study conditions, subgroup analyses to examine differential impact of the intervention were rare (e.g., by exposure type, symptom patterns and levels, severity of maltreatment, and family characteristics). Moreover, the majority of studies we reviewed failed to provide sufficient attention to differences in children's cognitive, social-emotional, and language development. Additionally, small samples precluded subgroup analyses and examination of moderating and mediating effects. As a result, we found limited evidence to assess treatment effectiveness or issues that affected treatment response by age group.

Future Research Needs

The myriad methodological, conceptual, and operational challenges to clinical research with maltreated children cannot be overcome by individual, site-specific, time-limited studies largely conducted by the developers of interventions or single research teams. To move the science forward, there clearly is a need for extensive multisite collaboration. A research network, for example, would provide the platform for efficient and methodologically rigorous collaborative clinical trials. It would allow for large enough samples to examine moderators of treatment response and to investigate subgroups for whom treatments are less, or more, efficacious or effective.^{91,92} A clinical research network could be an extension of an existing structure, such as the National Child Traumatic Stress Network. A multisite collaborative would provide a powerful nexus for shared strategies and best practices that result in successful implementation of controlled research studies with vulnerable families. Specific areas for focus in future research are listed below.

Head-to-Head Trials. Additional comparative efficacy and effectiveness trials, comparing interventions with best alternative approaches, are needed to build the evidence for interventions with low strength of evidence. When studies include multiple conditions, reporting of one-to-one (pairwise) comparisons is critical.^{93,94}

Intervention Considerations. Rigorous research is needed to test adaptations of existing interventions, for which there is an established evidence base of efficacy or effectiveness, with new populations and in new settings or contexts. Adaptations may exclude or substantially modify components of an original version resulting in fundamental changes relative to the original intervention. Thus, research on adaptations demands particularly close attention on the part of the researcher to therapist- and participant-level characteristics, as well as other factors (e.g., setting, timing). The paucity of relevant contrasts for KQ 3 suggests a need for a qualitative

analysis of the literature to identify treatment characteristics that are relevant to and useful for the field. In the course of our review, we noted the distinction between and unequal attention paid to specific techniques (e.g., intervention-specific strategies and content) in relation to factors that may be common across interventions, at the level of client-therapist interactions (e.g., therapeutic relationship, personal characteristics of therapist and patient, engagement). The latter may be essential to understanding treatment efficacy or effectiveness and merits further attention.⁹⁵⁻⁹⁷

Assessment of Clinical Need. The use of common and validated measures for identifying symptomatology to define clinical need is a major omission undermining the strength of the evidence base. Greater coalescence around such measures will help future reviews generalize findings across studies and settings and help achieve consensus in the field around effective and ineffective interventions. Additional research is particularly needed to determine the relative benefits of various interventions across age subgroups.

Outcomes. Future research should pay heightened attention to the consistent use of measures with well-established validity, particularly assessment of improvement in the caregiver-child relationship. Assessment of longer-term outcomes is also scarce in the existing literature; future research should assess the duration of symptom remission or functional improvement, generalization of outcomes from one setting to another, outcome variability according to clinically heterogeneous subgroups, and subsequent retraumatization. Among child welfare outcomes, permanency warrants improved measurement. Currently, outcomes generally reflect study constraints rather than the desired outcome of a constant, stable relationship with a parent or caregiver who comes to love and accept responsibility for a maltreated child.

Research on Engagement/Retention. We were able to find only one comparative study for inclusion in this review relevant to the issue of engagement and retention. Future research could compare interventions in terms of retention or examine features of interventions associated with engagement and retention.

Study Design and Reporting. Researchers should review and use the Consolidated Standards of Reporting Trials (CONSORT) statement to ensure the greatest clarity in reporting of trials.⁹⁸ Future studies need to be adequately powered and statistical power calculations presented. Trials in this field do not typically blind participants or providers, but future studies should make every effort to blind outcome assessors to reduce the risk of detection bias.

Statistical Considerations. Even with concerns about limited sample sizes and attrition, few studies in the literature included an intention to treat (ITT) analysis. ITT analysis may not be useful when differential attrition exists across study conditions, as was often the case for the maltreatment studies we reviewed. However, in cases where there is not high differential attrition, ITT analysis helps to avoid the error of incorrectly attributing effectiveness to an intervention that actually may result from underlying differences in the final study groups. More consistent use and clear reporting of ITT analysis would enhance the interpretability and generalizability of study findings. Other concerns related to statistical analyses and inferences pertain to the need to control for multiple comparisons and limit post-hoc analyses. Future studies should account for multiple comparisons and clearly state planned statistical analyses. In

complex multifactorial interventions, planned statistical analyses should include the assessment of mediators and moderators.

Beyond these particular statistical issues, a more fundamental question that merits increased attention in future research is how scientists should approach probabilistic estimates of effects and how to express confidence in their findings. Across the scientific literature we reviewed, researchers used only a classical/frequentist approach to hypothesis testing that views probability as the likelihood of a given result's being true or false; a null hypothesis is rejected or accepted with a certain probability of an accurate conclusion or "true effect." Relying on p-values to assess whether a research finding is true may be subject to inherent error associated with small sample sizes and extensive heterogeneity of design, definitions, and outcomes, among other considerations.⁹⁹ Hence, the use of alternate statistical analyses, namely Bayesian methods, may be warranted in future research because of the complexity of the population and heterogeneity of clinical need.

Implementation and Sustainability Research. Rigorous study of implementation and issues related to maintenance of an intervention is needed. Fidelity to the intervention model was infrequently reported and sparse in detail in the current literature. Research on lower intensity interventions and factors that affect accessibility for this vulnerable population is particularly needed, along with increased attention to "dose" or how much of an intervention is needed to effect change. Because most mental health care is based on service reimbursement, future research should take into account the interplay of treatment model and structure, service definitions, utilization management, treatment authorization, and claims submission and authorization.

Conclusions

Maltreatment intervention research, particularly comparative research, remains a relatively nascent field. Much of the research relies on relatively small samples and has limited statistical power, so data cannot be stratified according to subgroups or considered in terms of potential mediators and moderators of effect (e.g., age, type and chronicity of maltreatment). It is important to note that low or insufficient strength of evidence is not equivalent to a judgment of an intervention as ineffective. Rather it reflects the justifiable state of affairs where many promising or widely used approaches have not been the subjects of empirical study with maltreated children. This review draws attention to the herculean efforts involved in conducting high-quality trials of mental health and psychosocial interventions, a challenge that is potentiated with the vulnerable, maltreated population that is the focus of this review.

Although several interventions emerged with evidence to support their comparative efficacy or effectiveness, the strength of the evidence was low for the vast majority of outcomes. Consequently, our main finding was that the literature in this field is strikingly limited due to numerous substantive and methodological gaps. These limitations include (a) the predominance of single trials conducted by the treatment developers testing unique interventions that often employ strategies very similar to those of other approaches, (b) usual care or wait-list controls rather than head-to-head comparisons, (c) short-term outcomes, (d) inadequate reporting of attrition, and (e) wide heterogeneity in type and psychometric soundness of outcome measurement across studies.

Thus, this review serves as an urgent call for improving and building the evidence base for interventions to promote the well-being of maltreated children. A multisite research network is a

powerful platform that could facilitate the conduct of large, methodologically rigorous comparative efficacy and effectiveness trials needed to move the field forward. More broadly, a paradigm shift is required on the part of researchers and funders alike to galvanize the commitment and resources necessary for conducting collaborative clinical trials with these particularly vulnerable children and families.

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Introduction

Background

Exposure to abuse and/or neglect in childhood has serious adverse consequences across the lifespan, including increased risk of emotional and behavioral disturbances, delinquency, violent crime, and chronic disease.¹⁻⁷ Because a primary caregiver (i.e., parent or other family member serving in this role) is the source of psychological harm, child maltreatment violates the child's fundamental need for a sense of security, trust, and meaning in the world.⁸⁻¹² As such, maltreatment represents severe disruption of the parent-child relationship, frequently enduring, that can cause prolonged high levels of stress that overwhelm the child's capacity for effective coping.¹³⁻¹⁵ For children who are removed from the home and placed in out-of-home care, separation from and loss of the primary caregiver can exert its own toxic stress that compound the original insult of the abuse or neglect. The unrelenting chronic stress associated with severe and repeated maltreatment has been shown to trigger a cascade of maladaptive physiological and psychological responses, propelling the child along a trajectory of accumulating problems that can ultimately lead to the wide-ranging and persistent pathologies documented in the scientific literature.^{9,13,16-19}

The current comparative effectiveness review (CER)²⁰ on the topic of child maltreatment is the first in a two-part series focusing on interventions that address child exposure to maltreatment and other traumatic experiences. The second review in the series focuses on interventions with children exposed to traumatic events other than maltreatment or family violence; these include terrorism, community violence, war, school violence, natural disasters, medical trauma, and death of a loved one. Both reviews were carried out under the auspices of the Agency for Healthcare Research and Quality's Effective Health Care Program, the goal of which is to improve the quality, effectiveness, and efficiency of healthcare delivery²¹ with rigorous and transparent systematic reviews. As such, this review was undertaken to provide stakeholders with a comprehensive review of the available comparative research in the field of child maltreatment. We acknowledge that the rigorous approach specified for a CER limited the range of interventions that could be included. In this regard, readers may be surprised to find that several approaches relevant to current practice in the trauma field are not represented. Thus, we advise readers to be cautious in drawing conclusions with regard to recommending specific approaches. While the review does illuminate the relative strength of evidence based on the comparative research that is presently available, its *central purpose is to identify critical areas to address in future intervention research with maltreated children.*

The topic of child maltreatment necessitated its own review, separate from a consideration of other types of trauma, for two key reasons that pertain to clinical heterogeneity. First, maltreatment presents a different clinical scenario than other types of traumatic exposure, as the interpersonal nature of the traumatic experience can result in different clinical presentations, system responses (e.g., child protective services), and intervention approaches. The critical differentiating feature of maltreatment compared with other traumatic exposures is the subversion of parenting and family as the source of protection and sanctuary. When the maltreating parent violates these fundamental assumptions, children's sense of security and predictability may give way to terror and hopelessness. Second, children exposed to abuse and neglect are widely heterogeneous in terms of the caregiving context (e.g., maltreated children may live in foster care, in a residential setting, or at home with the offending biological parent),

type of maltreatment experienced, nature of the perpetrator (one or both parents, parent's partner, relative, sibling), severity and nature of symptomatology, and prior and concurrent exposures to other traumatic or stressful conditions, particularly intimate partner (domestic) violence.²²⁻²⁵

We call the reader's attention to the absence of domestic violence research in this review. As the topic for this CER was refined during the review process, the decision was made to include only studies that specifically target maltreatment, thus omitting studies with a broad focus on family violence or a specific focus on intimate partner or domestic violence. We recognize that exposure to maltreatment and exposure to domestic violence are related epidemiologically,²⁶ such that studies that address maltreatment will de facto include children exposed to domestic violence. Because of this co-occurrence, it can be difficult to determine whether outcomes related to maltreatment and interpersonal violence involve a common or unique clinical pathway. The challenge is complicated further when recognizing that predisposition, prior experience and exposure, and environmental context and responses can represent both points of convergence and divergence. Our primary intent related to the narrowed scope was to limit, to the extent possible, clinical heterogeneity arising from maltreatment as directed toward the child and from domestic violence as directed toward another adult, where the child is a witness and sometimes ancillary victim.

Definitions

The term child maltreatment is defined variously in the scientific literature and across the many health and human services sectors that address the issue. For this review, we used two sources to define maltreatment: a report from the U.S. Centers for Disease Control and Prevention (CDC) proposing uniform definitions for improved public health surveillance²⁷ and language from the key federal legislation that sets the standards states must incorporate into their statutory definitions, the Child Abuse and Prevention Treatment Act (CAPTA; 42 U.S.C. §5101, as amended by the CAPTA Reauthorization Act of 2010).²⁸ Thus, we define maltreatment as any act or series of acts of commission or omission by a parent (custodial and noncustodial parents) or other caregiver that results in harm, potential for harm, or threat of harm to a child; the harm to a child may or may not be the intended consequence. For this review, we also define neglect as privation or severe social deprivation, as can be the case in institutional care if the child does not have the opportunity to form a close relationship with a primary caregiver.

However, moving from definition to identification in the area of child maltreatment presents a number of thorny challenges. There are two primary ways that children are identified as maltreated: (1) report to the child welfare system, or (2) screening and assessment by another child-serving system (e.g., pediatrics, mental health, schools). A report to Child Protective Services (CPS) may be screened out (i.e., no investigation is conducted), investigated without confirmation of maltreatment, or substantiated (i.e., evidence for maltreatment is strong). Yet even substantiation cannot serve as a sufficient index of maltreatment, as the definitions of maltreatment vary widely across US states and foreign nations. In instances of maltreatment not substantiated, sufficient indicators to affirm maltreatment are lacking yet its unequivocal absence cannot be proven. Moreover, many maltreated children, arguably a majority, are not reported to CPS. A subset of children not reported to CPS may be identified through other child-serving systems, which are also subject to false positive or false negative conclusions owing to varied methods of screening and assessment (with varying degrees of reliability and validity), definitional criteria, and skill with which conclusions are drawn. Not surprisingly, these many factors affecting identification can result in confusion and inaccuracy for researchers, clinicians,

and policymakers, leading to inconsistency in the way maltreatment has been operationalized in the scientific literature.

Incidence and Prevalence

Child maltreatment is a global public health problem affecting high-, middle-, and low-income countries. According to a recent report from the World Health Organization and the International Society for the Prevention of Child Abuse and Neglect,⁶ international studies have reported high rates of child physical abuse (between 25% to 50% of all children, depending on the country). Global estimates of child sexual abuse are also high: 20 percent of women and 5 percent to 10 percent of men report experiencing sexual abuse during childhood.⁶ Child welfare agencies in the high-income countries of the United Kingdom, Canada, and Australia report rates of maltreatment among substantiated cases ranging from 34 percent to 60 percent for neglect, 10 percent to 28 percent for physical abuse, and 7 percent to 10 percent for sexual abuse.⁷

In the United States, a nationally representative survey on child exposure to violence conducted in 2008 found that more than 1 in 10 children (10.2%) had experienced some form of maltreatment (including physical abuse, psychological or emotional abuse, and child neglect) during the previous year.²⁹ Nearly 1 in 5 children (18.6%) had been exposed to maltreatment in their lifetimes.³⁰ Important incidence and prevalence data for the United States are also available from investigated reports of maltreatment to state CPS agencies (National Child Abuse and Neglect Data System, NCANDS).³¹ However, a caveat about the accuracy of these data is warranted: it is generally understood that (a) minimum standards set by federal and state laws for defining abuse and neglect, and (b) misidentification of cases serve to greatly underestimate the true incidence.³² The most recent NCANDS data, for federal fiscal year 2010, indicate that approximately 5.9 million children were involved in 3.3 million referrals to CPS; 2 million referrals were screened in and received a CPS response. Of the nearly 1.8 million reports that received an investigation, 436,321 were found to be substantiated, and 24,976 were found to be indicated (meaning that maltreatment was highly likely despite insufficient evidence to substantiate).³¹

Among substantiated cases, the most prevalent type of maltreatment was neglect (78.3%) followed by physical abuse (17.6%). Approximately 9 percent of victims experienced sexual abuse and 8 percent suffered psychological maltreatment.³¹ Infants less than 1 year of age had the highest rate of victimization at 20.6 per 1,000 children. Approximately 34 percent of victimized children were infants and toddlers (0 to 3 years of age); 23.4 percent were 4 to 7 years of age, 18.7 percent were 8 to 11 years of age, and 17.3 percent were 12 to 15 years of age. Victimization was split almost evenly between the sexes, regardless of age group. More than one-third (37.2%) experienced victimization by their mother acting alone, 19.1 percent were maltreated by their father acting alone, and nearly 18.5 percent were maltreated by both parents.³¹

Regarding race and ethnicity, the majority of children with substantiated maltreatment in 2010 were Caucasian (44.8%), followed by African American (21.9%), and Hispanic (21.4%).³¹ African American, American Indian or Alaska Native, and children of multiple racial descent had the highest victimization rates (14.6, 11.0, and 12.7 per 1,000 children, respectively). African American children, in particular, are disproportionately represented in the child welfare system relative to their percentage in the general population (approximately 15%). Whether these figures represent actual higher rates of maltreatment among African American children or bias

resulting from systematic differential attention to them in CPS referrals, investigation, or service allocation is a matter of considerable debate in this field.^{33,34}

Child maltreatment is multiply determined; the numerous risk factors for child abuse and neglect cut across domains of parent/caregiver, family, child, and environment.^{6,35,36} At the caregiver level, a major risk factor is the parent's own history of maltreatment as well as depression, substance abuse, negative ideations about the child, lack of or inaccurate knowledge of normative child development, harsh discipline practices, and being a young/adolescent parent. At the family level, risk factors include single parenting, stress, social isolation, marital conflict, and domestic violence and, at the environmental level, poverty and community violence. Several child attributes that put additional physical and emotional demands on the parent/caregiver are also recognized as risk factors, including young age of the child (younger than 3 years) and child physical, cognitive, and emotional disabilities. Experts generally agree that the unhealed emotional wounds of childhood maltreatment can coalesce with other risk factors to carry maltreatment's negative effects on parenting forward across generations, although rates and patterns of intergenerational maltreatment vary substantially across studies.³⁷⁻⁴²

Etiology

A burgeoning knowledge base in psychobiological research is advancing our understanding of the toxic effects of prolonged, severe, and unpredictable stress on brain development and child mental and behavioral outcomes. Exposure to toxic or traumatic stress in the form of maltreatment may alter the developing brain by sensitizing neural pathways and overdeveloping regions of the brain where fear and anxiety responses are activated.⁴³ One specific pathway of effect is dysregulation of the hypothalamic-pituitary-adrenal axis. Specifically, chronic exposure to stressful and arousing events is associated with activation of this axis, which releases a cascade of steroid hormones, including the primary stress hormone cortisol. Excess cortisol production alters children's baseline for arousal such that even nonthreatening environments stimulate a fear response.⁴⁴ Dysregulation of neurochemical regulatory processes is especially damaging in the early years of development when neurological structures are undergoing formation (see Gunnar et al., 2006⁴⁵ for a review). In the case of maltreated infants and young children, researchers have found that children in foster care exhibit atypical diurnal cortisol production patterns;⁴⁶ similarly, research with children exposed to severe social deprivation in institutional care prior to adoption have identified alterations in brain functioning including significantly reduced cortical activity and dysregulation of neuroendocrine systems.^{47,48} Atypical cortisol production in adults has been found to be associated with conduct disorder, antisocial personality disorder, depression, and substance abuse.^{47,49,50}

Another critical source of toxic stress contributing to poor mental and behavioral outcomes in this vulnerable population is the experience of repeated disruption in care when children are removed from the home and placed in foster care. Although the majority of children reported to CPS remain living at home with their biological caregiver,⁵¹ approximately 254,000 children in the United States enter foster care annually. Foster care is a component of the child welfare system that entails "placement of a child in a substitute home environment when the child's parents are unable or unwilling to provide appropriate care. It is intended to be a time-limited placement on the way to determining one of the following three permanency plan options: reunification with the biological parent, conversion of the foster home to a legally permanent guardianship or adoption, or placement of the child into another legally permanent family."^{52, p.1404} Approximately 20 percent of children placed in out-of-home care are removed

from their homes because of risks other than maltreatment, per se, that threaten their safety (namely because of a substance-abusing parent, prenatal substance-exposure, or domestic violence). CAPTA allows states wide latitude in their definitions of maltreatment that allow them to make appropriate referrals and develop service plans for the “safe care of the child,” such that states may or may not define prenatal alcohol or drug exposure or parental substance abuse as a category of child abuse or neglect.²⁸ That said, the vast majority of children are removed because of substantiated abuse or neglect.³¹

Approximately 30 percent of children whom CPS removes from the home are eventually reunified with their prior, often biological, primary caregiver.^{51,53-55} However, these children are very likely to be removed from the home again. One study that examined re-entry rates in the Multistate Foster Care Data Archive, a longitudinal dataset representing 1.3 million foster children in 12 states, found that the majority (nearly 70%) of children reunified with their primary caregivers re-entered care within a year and that nearly 40 percent of these children were placed again within 90 days.^{56,57} Another study using this same dataset examining re-entry rates among infants found that the 27 percent who were discharged from foster care eventually returned and that re-entry rates differed by placement type. Specifically, infants placed with relatives and then discharged to relatives were least likely to reenter foster care (11.9%) compared with children discharged to their parent (28.5%) or placed with a traditional foster family (32%).⁵⁸ A typical child in foster care will experience slightly more than three placement changes over 3 years.⁵⁴ Children with medical, developmental, and mental health problems are especially likely to be moved from placement to placement.⁵⁹ This scenario of repeated separation from primary caregivers and the corollary loss of important attachment relationships aggravates the child’s sense of fear, isolation, and betrayal caused by the original insult of maltreatment. Particularly in the earliest years of life, attachment disruption as a result of repeated separations from and loss of important caregivers puts children at risk for socioemotional dysregulation and developmental problems.^{60,61}

Given the variability in children’s maltreatment exposure and experiences related to foster care, it follows that mental and behavioral problems among abused and neglected children vary widely in type and severity of symptoms, which include traumatic stress, depression, anxiety, and behavioral problems. As described earlier, when maltreatment is chronic, cumulative, and prolonged, it may present as a form of complex trauma, a subset of psychological trauma, with potentially profound negative effects on fundamental developmental processes in childhood.⁸ When children experience unpredictable detachment, neglect, violence, and repeated abandonment in the context of their early caregiving relationship, their sense of self, other, and self in relation to other becomes disturbed when, under normal conditions, it should be becoming consolidated.^{8,14,18,62} The disruption of healthy attachment in turn impairs the child’s capacity for emotional regulation, empathy, and coping.^{14,15,60,61}

These early impairments can lead to chronic dysregulation of affective experience, including mood disorders, as well as under- and overcontrolled behavior patterns.⁶³ Yet most children experiencing complex trauma do not meet diagnostic criteria for post-traumatic stress disorder (PTSD), in part because exposure to maltreatment and traumatic loss associated with separation from caregivers do not necessarily meet the American Psychological Association’s *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, Text Revision (DSM-IV-TR) criteria for a traumatic event. Diagnosis of PTSD and other mental or behavioral disorders is particularly complicated for young children who, in the context of rapid development and maturation, seldom meet full standard or diagnostic criteria. Rather, they often exhibit symptom

clusters that can be characterized in terms of alternate diagnostic systems (e.g., 0 to 3 Diagnostic Classification⁶⁴) that address developmentally specific clinical presentations that can be precursors to later poor outcomes throughout childhood and adolescence and into adulthood. Recently, a Developmental Trauma Disorders Task Force of the National Child Traumatic Stress Network has begun to conceptualize a new diagnosis, developmental trauma disorder, to address with greater precision the developmental, psychological, biological, and social factors that serve as both causes and outcomes of child maltreatment.⁶⁵ Although consensus is lacking on this emerging diagnosis, attention to children's complex trauma histories in diagnostic assessment and effective treatment is a central topic in children's clinical care.^{63,65}

Disease Burden

The National Survey on Child and Adolescent Well-Being (NSCAW) provides key indicators of child well-being among children investigated for maltreatment in the United States, tracking the extent of mental and behavioral health needs in this population over time.^{51,66} Among children who come in contact with CPS, 48 percent show signs of an emotional or behavioral problem and more than 30 percent of children birth to 3 years have developmental delays.⁶⁷ However, only 25 percent of the NSCAW population receives any specialty intervention to address their developmental and other special needs.^{68,69} Data from the National Survey of Adoptive Parents (NSAP) finds that children adopted from foster care have similarly high morbidity rates including attention deficit hyperactivity disorder (38%) and behavior and conduct problems (25%).⁷⁰ Research with international adoptees has found that children who experienced severe social deprivation in institutional care prior to adoption have more behavioral and social problems than international adoptees without such preadoption adversity.⁷¹ One study found that children adopted from countries where the conditions of large-group institutional care put children at risk for social deprivation (such as Romania) were 2 to 2.5 times more likely to experience disability, including impaired functioning due to emotional impairment, compared with children adopted domestically.⁷²

Child maltreatment also represents a significant economic burden to society, cutting across many different service sectors including child welfare, health care, special education, and criminal justice. A recent study provides estimates of the aggregate lifetime costs of fatal and nonfatal child maltreatment. In addition to child welfare, special education, and criminal justice costs, the authors factored both short- and long-term health care costs as well as lost productivity into their estimations. Using incidence data from 2008, the researchers estimated that the total lifetime costs (in 2010 dollars) of nonfatal child maltreatment for CPS-investigated cases (that is, substantiated cases of child maltreatment) are \$122 billion; in fatal cases, estimated costs (also based on CPS data) are \$2 billion.³² These estimates reflect approximately \$25 billion in short- and long-term health care costs, \$84 billion in productivity losses, \$4 billion in child welfare costs, \$4 billion in criminal justice costs, and \$5 billion in special education costs.³² Another dimension of societal cost burden is the impact on Medicaid, as children in foster care account for a disproportionate share of Medicaid expenditures relative to their proportion of Medicaid enrollment. Much of this disparity results from foster children's disproportionate receipt of mental health services. Youth in foster care use Medicaid-reimbursed mental health services at a rate 8 to 15 times higher than other Medicaid-eligible youth.⁷³⁻⁷⁶

Intervention Strategies

Interventions represented in the literature that met our criteria for this review focus on the clinical needs of the child and/or the child-caregiver relationship to improve child well-being and positive child welfare outcomes. Relevant interventions include both psychosocial or pharmacological interventions; however, no eligible studies addressing pharmacotherapy were identified for inclusion. Although there are many interventions in the field that aim to improve the system of care for maltreated children and families, broadly defined service delivery strategies are not included in this review. These encompass an array of approaches such as differential response, respite care, case management procedures, financial support, subsidized guardianship, and court improvement strategies. We recognize system-level approaches are highly relevant to the child welfare system; however, their inclusion would have stretched the limits of the current review in terms of both scope and generalizability. This issue is addressed also in the Methods chapter when we describe the exclusion and inclusion criteria for studies included in this review.

Intervention research with maltreated children is challenging due to the complexity of their clinical needs. As discussed earlier, maltreatment is seldom an isolated event but is cumulative and tends to co-occur with multiple traumatic exposures; given this clinical picture, maltreated children often present with multiple mental health issues. A subset of interventions included in this review comprise treatment components specifically designed to address traumatic stress and other mental and behavioral health symptoms attributable to a particular exposure (e.g., sexual or physical abuse), although these interventions are commonly applied across a wide range of symptoms or symptom severity. However, the majority of intervention studies in this review target children based only on exposure rather than the presence, type, or degree of symptomatology.

The interventions included in this review are diverse in theoretical basis, target (child, parent, parent and child, family), modality (e.g., individual, dyadic, group format), setting (clinic, community agency, and/or home), intervention strategies, intensity, and outcomes. Several interventions are adaptations of or derived from approaches designed for other populations. By adaptation, we refer to approaches that in their adaptation and/or augmentation maintain the integrity of the original intervention (i.e., with minor modifications to the curriculum or manual and/or supplemental components). By derivation, we refer to approaches wherein the authors do not specify the degree to which the original model was implemented and/or the extent to which core components of the standard approach were modified. For this review, we categorized the interventions as parenting, trauma-focused treatments that are predominantly child-focused, or enhanced foster care approaches. In the section that follows, we describe each of these intervention types and provide a table defining their key features.

Parenting Interventions

The majority of interventions eligible for inclusion in this review are parent-mediated approaches; that is, their primary aim is to modify parenting behavior and thereby improve child outcomes. Parenting interventions with maltreating parents target core caregiver- and/or family-level risk factors associated with child well-being including: increasing the caregiver's attunement, sensitivity, and responsiveness to the child's needs; improving negative attitudes toward the child and/or the role of parenting; teaching positive discipline techniques to use in managing challenging behavior instead of corporal punishment; improving family functioning;

and/or addressing safety risks in the home. Parenting interventions with maltreating families also commonly focus on reducing the parent's stress and promoting the parent's emotional well-being. Interventions also commonly include a component of practical assistance (e.g., assistance with food insecurity or substandard housing) or support to ameliorate stressful circumstances for the family.

When interventions are directed at the foster or kin caregiver, the focus is on increasing the caregiver's understanding of the effects of abuse and neglect on children; empathy towards the child; and capacity to provide nurturing, responsive, and developmentally appropriate care. Many parenting interventions with foster or kinship parents are directed at supporting the caregiver in effectively managing child behavioral problems and reducing the caregiver's stress related to the behavioral challenges. The interrelated goals of these interventions are to improve child functioning, avoid a failed out-of-home placement which results in a negative placement change (e.g., the child being moved to a new foster care placement, a more restrictive environment such as psychiatric care or juvenile detention center, or child runaways), and expedite a positive permanent placement for the child. Treatment plans often include concurrent planning that simultaneously aims to support the child's relationship with the biological and foster caregiver in the interest of a positive exit from foster care and timely permanent placement (that is, either reunification with the biological parent or other relative or adoption).

Table 1 outlines key features of the parenting interventions addressed in the report.

Table 1. Parenting interventions: Key features

Intervention	Brief Description
Attachment and Biobehavioral Catch-up ⁷⁷⁻⁸⁵	<ul style="list-style-type: none"> • Home-based approach to help foster parents provide nurturing, sensitive care that promotes child regulatory capabilities and attachment formation • Employs manualized parenting curriculum, flexibility in responding to current issues, and use of videotapes of parent-child interaction to illuminate child cues and strengths in the relationship • 10, 1-hour weekly home visits with child and foster parent or child and biological caregiver together • Children ages birth to 5 years
Attachment-based Intervention ⁸⁶	<ul style="list-style-type: none"> • Home-based approach loosely derived from Attachment and Biobehavioral Catch-up and other attachment-focused interventions; focuses on maternal sensitivity to child emotional and behavioral cues to support secure attachment • Employs individualized parent-child interaction support, video feedback, and discussion of attachment/emotion regulation-related themes • 8, 1.5-hour weekly home visits • Children ages 1 to 5 years
Child-Parent Psychotherapy ^{87,88}	<ul style="list-style-type: none"> • Dyadic home- or clinic-based approach; relationship-based dyadic psychotherapy as developed and manualized by Cicchetti and colleagues, with focus on supporting formation of and repairing the parent-child attachment relationship • Based on infant mental health principles; attachment and developmental psychopathology theory • Employs the parent-child relationship as the "port of entry" for therapeutic work • 50, approximately 1-hour weekly home visits with child and caregiver together • Children ages 12 months to 5 years
Incredible Years Adaptation ⁸⁹	<ul style="list-style-type: none"> • Incredible Years⁹⁰ adapted for use with foster and biological parent pairs to address placement issues such as safety and attachment; supplemented with a coparenting component based on structural family systems theory; focuses on supporting a positive, nonconflicted relationship between caregivers and promotes a caregiving environment sensitive to the child's needs • 12, 2-hour weekly parent group sessions for biological-foster parent pairs, supplemented weekly sessions (duration not specified) with individual families (biological and foster parent pair and target child) • Children ages 3 to 10 years

Table 1. Parenting interventions: Key features (continued)

Intervention	Brief Description
Keeping Foster Parents Trained and Supported ^{91,92}	<ul style="list-style-type: none"> • Didactic group-based parent training approach to increase foster and kin parents' positive reinforcement relative to discipline, based on the foster parent training component in the Multidimensional Treatment Foster Care model (see Table 2 below); focuses on positive discipline strategies • Delivered by paraprofessionals; employs role plays, videotapes, homework practice • Employs didactic training and group discussion related to primary curriculum concepts • 16, 1.5-hour weekly parent group sessions, with 15-minute didactic presentations by facilitators then group discussion related to primary curriculum concepts • Children ages 5 to 12 years
Nurse Home Visitation Intervention ⁹³	<ul style="list-style-type: none"> • Home-visiting approach; focuses on intensive family support, parent education, and referrals to health and social services; derived from Olds and colleagues preventive intervention but authors developed their own manual⁹⁴ • Employs mutual problem identification, goal setting, and problem-solving strategies; supporting positive parent-child interaction • 6 months of 1.5-hour weekly home visits with parent, then visits every 2 weeks for 6 months, then monthly visits for 12 months • Children ages birth to 13 years
Parent-Child Interaction Therapy Adaptation ⁹⁵⁻⁹⁷	<ul style="list-style-type: none"> • Standard parent-child interaction therapy⁹⁸ adapted for abusive or neglectful parents; based on social learning and attachment theory; includes a motivational intervention orientation • Three phases: (1) motivational intervention (orientation phase); (2) child-directed interaction phase during which parents develop child-centered interaction skills; (3) parent-directed interaction phase during which effective discipline skills are the focus • Employs live parent-child skills practice/rehearsal, with live coaching by the therapist (immediate feedback from therapist from observation room to parent via wireless earphone); coaching driven by behavioral principles such as modeling, reinforcement, and selective attending to shape parents' behaviors • Motivational intervention: 6 clinic-based parent group sessions/therapeutic sessions: 12 to 14 approximately 1-hour clinic-based individual sessions with parent and child together • Children ages 4 to 12 years
SafeCare ¹⁰⁰	<ul style="list-style-type: none"> • Home-based multifaceted parent services to prevent and treat child abuse and neglect, formerly known as Project 12-Ways • Modules address parent-child or parent-infant interaction, parental stress, and home safety risks including behavior management, problem solving, infant and child health and nutrition, and social support. • Home visits at least weekly for 6 months (duration not specified) • Children ages 0 to 12 years

Table 1. Parenting interventions: Key features (continued)

Intervention	Brief Description
Videotape Intervention ¹⁰¹	<ul style="list-style-type: none"> • Brief videotape intervention informed by social learning theory to increase supportive maternal behaviors following sexual abuse of a child and the child's subsequent medical evaluation • Videotape provides specific information about short- and long-term psychological and behavioral effects commonly seen in sexually abused children, common reactions of parents, and importance of how parent respond to children; suggested responses presented as "BRAVE To Tell" representing five specific supportive behavioral approaches for interacting with child • 22-minute videotape presented to parents during child's forensic examination • Children ages 4 to 12 years

Note: This table only includes interventions that are included in the Results chapter of this review. There are many other interventions that are commonly used with this population; however, we did not identify any comparative studies with low or medium risk of bias that empirically assessed these interventions. Descriptions based on information provided by the authors in the included studies, the intervention Web sites (when available), and several registries of programs and practices.¹⁰²⁻¹⁰⁶

Trauma-Focused Treatments

Several interventions eligible for inclusion in this review were designed explicitly to target children's trauma and/or other mental and behavioral health symptoms. Most of these interventions also include a caregiver-directed component in the form of sessions that occur either alone or jointly with the child. Trauma-focused treatments include trauma-specific treatment strategies such as assisting the child to develop a trauma narrative, cognitive reframing and coping skills related to the trauma, and gradual exposure and mastery of traumatic reminders. Table 2 outlines key features of the trauma-focused treatments addressed in the report.

Table 2. Trauma-focused treatments: Key features

Treatment	Brief Description
Combined Parent-Child Cognitive Behavioral Therapy ¹⁰⁷	<ul style="list-style-type: none"> • Cognitive behavioral treatment approach for physically abusive parents, incorporates components of trauma-focused cognitive behavioral therapy^{108,109} and abuse-focused cognitive behavioral therapy^{110,111} • Treatment components: child gradual exposure/construction of a trauma narrative (child group), parent abuse clarification process (parent group), and joint trauma narrative/abuse clarification and negotiation/rehearsal of safety plan (parent-child group); also incorporates psychoeducation and parent skills training (e.g., cognitive-coping, anger management, and problem-solving skills) • Employs modeling, role plays, behavioral rehearsal, praise, corrective feedback, and homework assignments • 16, 2-hour weekly group sessions (over 16 to 20 week period) • Children ages 7 to 13 years
Eye Movement Desensitization and Reprocessing ¹¹²	<ul style="list-style-type: none"> • Information-processing treatment; addresses the experiential contributors of a wide range of pathologies; attends to past experiences and current situations that trigger dysfunctional emotions, beliefs, and sensations • Contains elements of many psychotherapies in structured protocols, including psychodynamic, cognitive behavioral, interpersonal, experiential, and body-centered therapies • Treatment components: 8 phases using various procedures including "dual stimulation" in which client, using either bilateral eye movements, tones, or taps, attends momentarily to past memories, present triggers, or anticipated future experiences while simultaneously focusing on a set of external stimulus • 12 or fewer 30- to 45-minute sessions • Children ages 3 years and older

Table 2. Trauma-focused treatments: Key features (continued)

Treatment	Brief Description
Group Psychotherapy for Sexually Abused Girls ¹¹³	<ul style="list-style-type: none"> • Psychoeducational approach with symptomatic sexually abused girls; includes generic and sexual abuse-specific components; social-work support group for caregivers • Treatment components: engaging girls and their caregivers, maintaining the therapeutic alliance, managing anxieties and appropriately handling postabuse and current concerns • Up to 18, 50-minute group sessions (girls), with concurrent parent group sessions every 2 weeks • Children ages 6 years and older
Group Treatment Program for Sexual Abuse ¹¹⁴	<ul style="list-style-type: none"> • Group psychotherapy for sexual-abuse victims • Treatment components: discussing the abuse in a supportive peer environment, increasing feelings of self-worth, providing psychoeducation to reduce future victimization, ameliorating future psychological problems, providing children with appropriate adult role models, and providing support regarding court participation • Weekly meetings for 6 months; children spend several cycles of the group, spending about 9 to 12 months in treatment • Children ages 9 to 12 years
Trauma-Focused Cognitive Behavioral Therapy ^{108,115,116}	<ul style="list-style-type: none"> • Cognitive behavioral approach for reducing the child's maladaptive responses to exposure to a traumatic event (namely sexual abuse); intended for children who have significant behavioral or emotional problems related to traumatic life events • Treatment components: skills in expressing feeling; recognizing the relationships between thoughts, feelings, and behaviors; training in coping skills; gradual exposure (also referred to as creating the child's trauma narrative); cognitive processing of the abuse experience(s); joint child-parent sessions; psychoeducation about child sexual abuse and body safety; parent behavior management support • 12 to 16 weekly, 1- to 1.5-hour sessions with individual child, individual parent, and conjoint sessions with child and parent together, typically provided in outpatient clinics but also used in hospital, group home, school, community, and in-home settings • Children ages 3 to 18 years

Note: This table only includes interventions that are included in the Results chapter of this review. There are many other interventions that are commonly used with this population; however, we did not identify any comparative studies with low or medium risk of bias that empirically assessed these interventions. Descriptions based on information provided by the authors in the included studies, the intervention Web sites (when available), and several registries of programs and practices.¹⁰²⁻¹⁰⁶

Enhanced Foster Care Interventions

This review includes three interventions that provide a comprehensive set of intervention and supportive services for children in foster care. These approaches include one that is solely child-focused, one that is directed at both the child and the foster parent, and two that are multimodal in nature (i.e., comprising multiple clinical intervention components including individualized treatment such as medication management). Table 3 outlines key features of the enhanced foster care interventions addressed in the report.

Table 3. Enhanced foster care interventions: Key features

Interventions	Brief Description
Bucharest Early Intervention Project ¹¹⁷⁻¹²⁹	<ul style="list-style-type: none"> • Specialized social work foster care network providing infant mental health-informed counseling and parenting support to foster parents caring for institutionalized infants and toddlers in Bucharest, Romania; adapted from New Orleans Intervention approach¹³⁰ • Intervention delivered via a team of social workers trained extensively in basic principles of infant mental health, including building attachment relationships, understanding children's postinstitutional adjustment, and managing common behavior problems • Intervention components: frequent in-home monitoring of child adjustment progress and problems; developmental interventions, particularly in the area of communicative behavior; behavioral intervention (including support and developmentally informed guidance regarding child behavior and emotional problems); service referrals; foster parent support group • Home visit every 10 to 14 days reduced to every 3 months after a year, with frequent phone contact throughout intervention period • Children ages 6 months to 3 years
Fostering Healthy Futures ^{131,132}	<ul style="list-style-type: none"> • Two-component approach comprising skills groups and mentoring; designed to foster resilience through the promotion of adaptive functioning in maltreated children in out-of-home care • Employs cognitive-behavioral skills group activities with process-oriented materials; curriculum was based on materials from other programs;¹³³⁻¹³⁵ mentoring component is individually tailored, targets creating empowering relationships with children, linking/supporting children in needed services receipt, helping children generalize skills learned in group to real world with weekly activities, engaging children in extracurricular, educational, social, cultural, and recreational activities, and promoting positive future orientation • 30, 1.5-hour weekly sessions plus up to 4 hours per week of individual meeting with mentor • Children ages 9 to 11 years
Middle School Success ^{136,137}	<ul style="list-style-type: none"> • Didactic, highly structured brief (summer) intervention for girls in foster care to build self-efficacy skills and reduce internalizing and externalizing problems; separate component for foster parents to facilitate placement stability by improving parenting skills • Youth intervention components: setting personal goals; establishing and maintaining positive relationships with peers and adults; developing effective decision-making and problem-solving strategies; developing support systems for reaching goals; and modeling, practicing, and reinforcing adaptive behaviors • Youth intervention employs role plays, games, or activities for practicing new skills; discussions; and ceremony during final session for participants to proclaim goals and commitments • Foster parent intervention focuses on establishing and maintaining stability in the foster home, preparing girls for the start of middle school, and preventing early adjustment problems during transition to middle school; foster parents taught to use a behavioral reinforcement system to encourage adaptive behaviors across home, school, and community setting via home practice assignments • 6 youth group sessions, meeting twice weekly for 3 weeks (high staff: participant ratio of 1:2 to allow for individual attention, one-to-one modeling/practicing of new skills, and frequent reinforcement of positive behaviors) and 6 concurrent parent group sessions • Throughout first year of middle school, 2-hour weekly session was provided to both foster parents and girls to provide follow-up training and support • Girls ages 10 to 12 years

Table 3. Enhanced foster care interventions: Key features (continued)

Interventions	Brief Description
Multidimensional Treatment Foster Care for Preschoolers ¹³⁸⁻¹⁴⁴	<ul style="list-style-type: none"> Family-based intervention directed at child, foster care provider, and permanent placement resource (birth parents; adoptive relatives or nonrelatives); delivered by a treatment team; adaptation of the Multidimensional Treatment Foster Care behavioral treatment alternative for adolescents in residential settings Intervention components: (1) intensive preplacement foster parent training, foster parent postplacement support and supervision from a foster parent consultant via daily telephone contact, weekly foster parent support group meetings, and 24-hour on-call crisis intervention; (2) child services from a behavioral specialist working in preschool or day care and home-based settings and participation in weekly therapeutic playgroup sessions where child behavioral, social, and developmental progress is monitored and addressed; (3) necessary medication management to address symptoms of attention deficit hyperactivity disorder, anxiety, and other disorders; (4) family therapy to reinforce and facilitate generalization of new parenting strategies across a range of contexts 12-hour intensive training for foster parents; children/families typically receive services for 6 to 9 months Children ages 3 to 6 years
New Orleans Intervention for Maltreated Children in Foster Care ¹³⁰	<ul style="list-style-type: none"> Partnership between university faculty with expertise in infant mental health and child welfare agency to address the developmental and mental health needs of children younger than 48 months placed in foster care for abuse or neglect in New Orleans, Louisiana Directed at the child and birth and foster families; delivered by a multidisciplinary treatment team specializing in infant mental health Intervention components: (1) intensive assessment, comprising an average of 15 to 20 hours of face-to-face contact with children and their important caregivers and contexts (including home- and clinic-based observations, standardized procedures and naturalistic observations, structured and unstructured interviews, and self-report measures); culminates in a case conference for involved professionals, a feedback sessions for parents, and a letter to the juvenile court detailing specific findings and recommendations; (2) comprehensive, multimodal, individualized treatment to meet the goals defined in the court-ordered case plan for the family, which often includes individual psychotherapy with parents, dyadic psychotherapy with parents and young children, medication, and crisis intervention Children birth to 4 years

Note: This table only includes interventions that are included in the Results chapter of this review. There are many other interventions that are commonly used with this population; however, we did not identify any comparative studies with low or medium risk of bias that empirically assessed these interventions. Descriptions based on information provided by the authors in the included studies, the intervention Web sites (when available), and several registries of programs and practices.¹⁰²⁻¹⁰⁶

Scope and Key Questions

Scope of This Review

This review provides a critical analysis and synthesis of the comparative efficacy and effectiveness of interventions (psychosocial and pharmacological) for children ages birth to 14 years that address child well-being and/or promote positive child welfare outcomes (safety, placement stability, and permanency). The review also examines (1) how interventions with different characteristics (modality, theoretical orientation, setting) compare in improving child outcomes, (2) how interventions compare in terms of treatment engagement and retention, and (3) adverse events associated with the interventions reviewed. Our intention was to balance the concerns of real-world practice and policy while at the same time carefully limiting heterogeneity in the studies we reviewed so as to maximize the generalizability of the findings.

Several peer-reviewed systematic reviews have been conducted on interventions with maltreated children; however, the reviews available to date each represent only a cross-section or a subset of the outcome of interest covered in this comprehensive CER. Examples include a meta-analysis of the effects of psychotherapy with sexually abused children and adolescents¹⁴⁵

and a meta-analysis of parent training programs to reduce parents' risk of abusing a child.¹⁴⁶ A Cochrane review is available on behavioral and cognitive behavioral training interventions with foster caregivers in the management of difficult behavior;¹⁴⁷ another Cochrane review, in the protocol stage as of 2012, will assess the effectiveness of family therapy for improving outcomes for children who have experienced physical abuse and preventing recurrence of abuse.¹⁴⁸ A relevant systematic review is also available from the Social Care Institute for Excellence of the National Institute for Health and Clinical Excellence (NICE) examining the effectiveness of training and support for foster caregivers and other professionals on the physical and emotional health and well-being of children and adolescents in foster care in the United Kingdom.¹⁴⁹

In 2010, the Office of Planning, Research and Evaluation (OPRE) in the U.S. Administration for Children and Families (ACF) made available the results of a systematic review examining the effectiveness of home visiting models serving pregnant women or families with children from birth to age 5 years.¹⁵⁰ Although reduction in child maltreatment was an outcome domain in the ACF/OPRE review, its focus on secondary prevention with at-risk families and narrow age range minimized the overlap with this review, because we target clinical interventions with children ages 0 to 14 years old already exposed to abuse or neglect or with known involvement with CPS. Other reviews with limited overlap because of their focus on preventive intervention include a recent systematic review by researchers at the World Health Organization¹⁵¹ and by the Preventing Violence Across the Lifespan Research Network (PreVAiL).^{152,153}

Additionally, several government and nonprofit organizations have developed highly regarded and widely used evidence-based registries and informational resources in this field. These sources help guide clinical and other practitioners, funders, and policymakers in selecting and supporting effective interventions to mitigate risk and to address the mental and behavioral health needs of children exposed to maltreatment. Examples include the National Child Traumatic Stress Network's library of Empirically Supported Treatments and Promising Practices,¹⁰² the National Registry of Evidence-based Programs and Practices (made available by the Substance Abuse and Mental Health Services Administration),¹⁰³ and the California Evidence-based Clearinghouse for Child Welfare.¹⁰⁶ Other seminal resources include a report on evidence-based practices for child abuse treatment by the Chadwick Center on Children and Families¹⁵⁴ and a set of guidelines for child physical and sexual abuse treatment from the Department of Justice.¹⁵⁵ This review will further help clinicians and other decisionmakers by providing a next step in understanding effective treatments with a comprehensive, systematic review of the comparative benefits and harms of evidence-based intervention with children exposed to maltreatment.

We used a population, intervention, comparators, outcomes, timing, and settings (PICOTS) framework to define these elements for the review (see Methods for a complete description of the PICOTS for this review). Specificity in defining each element in the PICOTS framework is a critical step in ensuring that a systematic review yields generalizable findings. The chief concern in defining the PICOTS with high specificity is to address the problem of clinical heterogeneity or "the variation in study population characteristics, coexisting conditions, cointerventions, and outcomes evaluated across studies included in a systematic review that may influence or modify the magnitude of the intervention measure of effect."^{156,p.6,157} The complexity of maltreatment exposure presented particular challenges related to clinical heterogeneity for this review, and this problem ultimately necessitated limitations in scope.

Thus, we focus on (1) children who represent a range of symptom expression or children for whom symptomatology is not reported; (2) diverse exposure experiences in type, severity,

developmental timing and chronicity, as well as children whose specific maltreatment experiences are not reported; and (3) different caregiving contexts (e.g., living at home with the biological parent who perpetrated the abuse or neglect or living in out-of-home care). Given these broad inclusion criteria, the EPC team imposed an age cutoff of 14 years so as to exclude from the population youth whose developmental capabilities and needs are distinct from those of younger children. Additionally, due to concerns about heterogeneity, we elected to exclude intervention studies that focused on primary or secondary prevention (i.e., study populations that were not currently involved with child welfare or where the description of the study population was too vague to make a determination regarding maltreatment exposure).

Defining and classifying relevant interventions for this review also presented major challenges because of their diversity. These include clinical treatments such as psychotherapy or psychosocial approaches with the child, parent, and/or child-parent together and pharmacotherapy; training programs with biological or foster parents delivered through the child welfare system; and service delivery approaches or strategies at the system level to improve the quality of care for children and their caregivers and families. Through the literature review process, we determined that system- or service-delivery level approaches were qualitatively distinct from discrete clinical interventions in terms of the degree of specificity regarding core treatment components and their implementation and specificity about the population. Ultimately the EPC determined that including both clinical and system- or service-delivery level studies was beyond the scope of a single review.

Need for Comparative Effectiveness of Interventions for Maltreated Children

Currently no national guidelines inform the selection of interventions for improving child well-being and child welfare outcomes for children who have been exposed to maltreatment. Although numerous resources and evidence-based registries exist that caregivers, clinicians, policymakers, and other decisionmakers can turn to for guidance on selecting and supporting treatments for maltreated children, differences in the rating schemas and approaches across these resources can present conflicting information that is confusing for consumers. Because consumers may not be aware of all resources available in the field or of important differences across the available resources, their decisions may not be fully informed.

Absent clear guidance on efficacious or effective treatment interventions with this population, at least one controversial approach with the potential to cause serious harm has been publicized and disseminated. “Holding” or containment therapy is an alternative child mental health therapy intended to treat attachment disorders; it has resulted in at least six documented fatalities.¹⁵⁸ In 2006, the American Professional Society on the Abuse of Children published a task force report critical of coercive practices in therapy promoted as forms of attachment therapy.¹⁵⁸ In April 2007, the Association for Treatment and Training in the Attachment of Children formally adopted a white paper stating its unequivocal opposition to the use of coercive practices in therapy, while advocating attunement, sensitivity, and regulation-focused techniques.¹⁵⁹

Key Questions

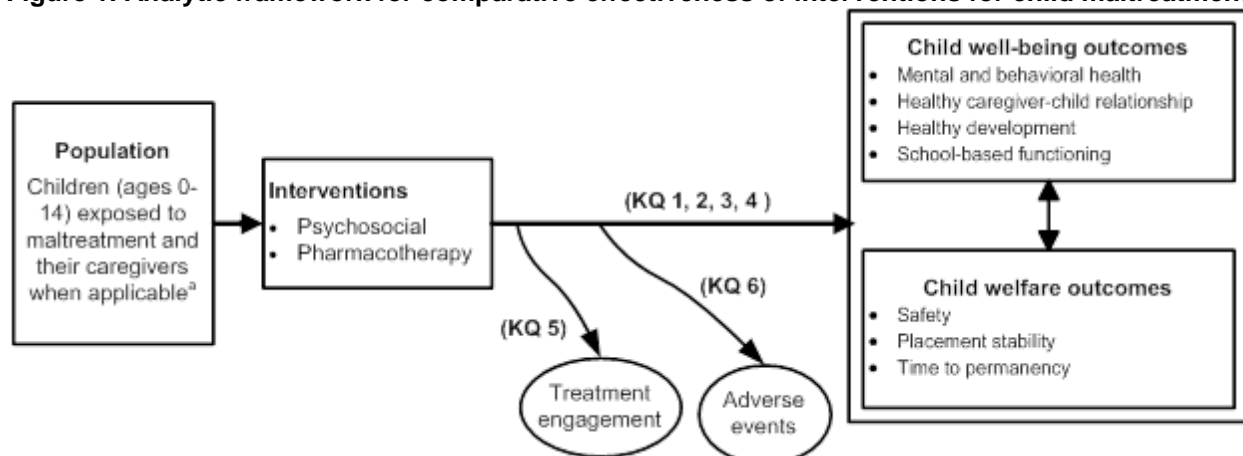
1. What is the comparative effectiveness of interventions with children exposed to maltreatment for promoting child well-being? Specifically:

- a. Mental and behavioral health
- b. Healthy caregiver-child relationship (e.g., secure attachment; increased caregiver responsiveness and sensitivity; positive parental attitudes toward childrearing; positive parental perceptions of the child and causal attributions about the child's behavior; decreased negative parent-child interactions; increased family functioning)
- c. Healthy development (e.g., cognitive, language, physical maturation)
- d. School-based functioning (e.g., grade retention, disciplinary referrals, attendance)
2. What is the comparative effectiveness of interventions with children exposed to maltreatment for promoting child welfare outcomes? Specifically:
 - a. Safety (i.e., prevention of maltreatment recurrence)
 - b. Placement stability
 - c. Permanency
3. Among the interventions under review, how do interventions with particular characteristics compare in improving child outcomes. Intervention characteristics may include:
 - a. Modality (i.e., individual, dyadic, group, family-based)
 - b. Theoretical orientation (e.g., cognitive behavioral, psychodynamic)
 - c. Type of setting (i.e., specialty or nonspecialty service-delivery settings)
4. How do interventions compare for improving child outcomes within population subgroups? Population subgroups comprise the following:
 - a. Child subgroups
 - i. Age and other sociodemographic subgroups (e.g., race, ethnicity, sex)
 - ii. Type of maltreatment exposure (e.g., neglect, physical abuse, sexual abuse)
 - iii. Severity of maltreatment exposure
 - iv. Presence of mental or behavioral health problems (e.g., complex traumatic stress disorders, serious emotional disturbance) or other special needs (e.g., failure to thrive, prenatal substance exposure)
 - b. Caregiver subgroups
 - i. Primary caregiving context: biological parent; foster, kin (relative), or adoptive caregivers; residential program or group home)
 - ii. Presence of mental health problems, substance abuse, or domestic violence
 - iii. Sociodemographic groups (e.g., age, race, ethnicity, sex)
5. What is the comparative effectiveness of interventions with children exposed to maltreatment for engaging children and/or caregivers in treatment (e.g., treatment adherence, treatment withdrawal)?
6. What adverse events are associated with interventions for children exposed to maltreatment (e.g., retraumatization, caregiver distress)?

Analytic Framework

Figure 1 presents the analytical framework for this review. This framework is a conceptual model that guided the analyses for this CER; key questions (KQs) are noted as appropriate to the linkages in this model.

Figure 1. Analytic framework for comparative effectiveness of interventions for child maltreatment



^aPopulation may include the child's primary caregiver(s) when the intervention targets the caregiving context.

Abbreviation: KQ = key question

The populations included in this review are children and young adolescents who have been exposed to maltreatment. Caregivers are also included in the population when the intervention targets the parent or includes a caregiver-directed component. KQ 1 assesses the effectiveness of the interventions reviewed in improving child outcomes, specifically mental and behavioral health and other aspects of healthy development such as physical, language, and cognitive development; the quality of the caregiver-child relationship; and school-based functioning. KQ 2 assesses outcomes that are of specific interest to the child welfare system: safety (i.e., maltreatment recurrence), placement stability while in out-of-home care, and permanency (e.g., successful permanent placement; time to permanency). The efficacy of interventions in important population subgroups is compared in KQ 4, while differences in efficacy by intervention characteristics such as theoretical orientation and modality are reviewed in KQ 3. KQ 5 assesses the evidence on treatment adherence, and KQ 6 reviews the literature on adverse events associated with treatment.

For the purpose of this review, caregiver-level outcomes (e.g., parenting attitudes, parenting practices, family functioning, and caregiver emotional well-being) are treated not as mediators of child outcomes but as indicators of the quality of the *caregiver-child relationship* outcome. We treat caregiver outcomes as such because the quality of the caregiver-child relationship is inherent to child well-being;¹⁰ additionally, analyzing mediating and moderating results was beyond the scope of this CER.

Organization of This Report

The remainder of this review describes our methods in detail, documents our results, and provides a discussion of our findings and recommendations for filling important research gaps. Appendixes provide details of the search strategy (Appendix A), forms used for review (Appendix B), studies excluded at the full-text review stage (Appendix C), risk of bias ratings (Appendix D), and comprehensive evidence tables (Appendix E).

Methods

This review is funded by the Agency for Healthcare Research and Quality (AHRQ) Effective Health Care (EHC) Program. In 2005, AHRQ created the EHC Program to improve the quality, effectiveness, and efficiency of health care delivery.²¹ The target audience “includes not only policymakers in government and private health plans but also clinicians, patients, and members of industry.”²¹

This comparative effectiveness review (CER) assesses the effectiveness, including benefits and harms, of clinical interventions for children exposed to child maltreatment. A team of researchers conducted this review using the methods described in AHRQ’s *Methods Guide for Effectiveness and Comparative Effectiveness Reviews*.¹⁶⁰ The team included three clinical psychologists, a family medicine physician, and developmental psychologist all specializing in child maltreatment, as well as several researchers with expertise in AHRQ CER methodology.

Topic Nomination, Development, Refinement, and CER Protocol

Through a public nomination process, a clinician in private practice expressed an interest in attunement parenting for foster and adopted children ages 5 to 12 years. The nominator cited current research indicating that childhood trauma led to a chronic state of stress, in turn increasing the potential for problem behaviors. During topic development and refinement, the RTI International–University of North Carolina Evidence-based Practice Center (EPC) followed the guiding principles for identifying and selecting topics established by the EHC program (these principles are described in detail elsewhere).¹⁶¹ The EPC designed the systematic review using a PICOTS (population, interventions, comparators, outcomes, timing, and settings)¹⁶² framework and defined a set of key questions (KQs) a priori with input from a range of stakeholders (i.e., key informants).

As originally nominated, the topic was particularly narrow in regard to the interventions (attunement parenting) and setting (foster and adoptive care). Following EHC guidance to explore nominated topics with an understanding of the “clinical logic underlying the rationale for a service,”¹⁶³ and the nominator’s interest in trauma associated with child abuse and neglect as a potent risk factor for mental and behavioral health problems, the EPC expanded the population to include children exposed to maltreatment and, more broadly, all children involved in the child welfare system regardless of setting (i.e., foster care, adoptive care, or in the care of biological parents).

Following refinement of the topic, AHRQ posted the proposed systematic review framework, including the PICOTS, KQs, and analytic framework, on the EHC Web site from 3/18/2011 to 4/15/2011. After the CER framework posting, the EPC reviewed public comments and consulted with a Technical Expert Panel to finalize the research protocol. Names of the members of Technical Expert Panel are listed at the front of this report. AHRQ posted the research protocol on the EHC Web site on 11/15/2011. Decisions based on clinical heterogeneity¹⁵⁶ of the population, diversity of interventions, and the resulting scope of the review led to modifications of the protocol (posted 1/10/2012).

Literature Search Strategy

Search Strategy

We systematically searched, reviewed, and analyzed the scientific evidence for each KQ. We conducted focused searches of MEDLINE (via PubMed), Social Science Citation Index (SSCI), PsycInfo, and the Cochrane Library. An experienced research librarian used a predefined list of search terms and medical subject headings (MeSH). The librarian completed the first search on 9/29/2011 and an update search on 5/4/2012. We limited searches to publications from 1990 and later to ensure clinical relevancy. We limited the search to studies published in English, based on limited resources. The complete search strategies, including specific limitations used for each database, are presented in Appendix A.

To build on the work of the existing evidence-based registries and databases on interventions for children, we searched the following registries for relevant articles that the systematic literature search may have missed:

- National Child Traumatic Stress Network's Empirically Supported Treatments and Promising Practices¹⁰²
- California Evidence-based Clearinghouse for Child Welfare¹⁰⁶
- National Registry of Evidence-based Programs and Practices¹⁰³
- Office of Juvenile Justice and Delinquency Prevention Model Programs Guide¹⁰⁵
- Center for the Study and Prevention of Violence Program Database.¹⁶⁴

We searched unpublished and grey literature relevant to the review. Methods for identifying grey literature included a review of trial registries, specifically ClinicalTrials.gov, Health Services Research Projects in Progress (www.nlm.nih.gov/hsrproj), and the European Union Clinical Trials Register (www.clinicaltrialsregister.eu). Further, AHRQ requested scientific information packets from the developers and distributors of the interventions identified in the literature review. Scientific information packets provide an opportunity for the intervention developers and distributors to share with the EPC both published and unpublished data that they believe should be considered for the review. We included unpublished studies that met all inclusion criteria and contained enough information on the research methods used for the risk of bias assessment.

Lastly, we searched reference lists of review articles that are pertinent but did not meet inclusion criteria for studies that we should consider for inclusion in this review.

Inclusion and Exclusion Criteria

Table 4 outlines the population, interventions, comparators, outcomes, timing, and settings (PICOTS) that define the major inclusion criteria for studies in this review. In the sections following the table, we discuss each domain.

Table 4. Population, Intervention, Comparator, Timing, Setting (PICOTS)

Domain	Description
Population	<ul style="list-style-type: none"> Children aged 0 to 14 years exposed to child maltreatment. For this review, we used the definition of maltreatment provided by the Centers for Disease Control and Prevention:²⁷ <ul style="list-style-type: none"> Child abuse: words or overt actions that cause harm, potential harm, or threat of harm to a child Child neglect: failure to provide for a child's basic physical, emotional, or educational needs or to protect a child from harm or potential harm; privation (conditions of severe social deprivation). Children aged 0 to 14 whose families were involved with child protective services, including children who remained in the care of their biological parent and those placed in out-of-home care (e.g., foster care, kinship care, group home care). We excluded studies that targeted children known to have been placed in out-of-home care because the child's behavior or condition posed a threat to their community or was beyond the control of his or her family (e.g., youth referred or mandated by the juvenile justice system to out-of-home placement because of multiple criminal offenses; children placed in out-of-home care due to serious emotional disturbance and no involvement with the child protective services). The population included the child's primary caregiver(s) when the intervention targeted the caregiving context. The primary caregiver was defined as the biological parent; foster, kinship (relative), or adoptive caregiver; or caregivers in a residential program or group home. Child subgroups were defined by age, type of maltreatment exposure, severity of maltreatment exposure, presence of child behavioral and mental health problems, and sociodemographic groups (race, ethnicity, and sex). Caregiver subgroups were defined as caregiving context (i.e., primary caregiver/environment), presence of caregiver substance abuse or other mental health disorder, caregiver sociodemographic characteristics (age, race, ethnicity, and sex).
Interventions	<p>Clinical interventions designed to prevent, ameliorate, or improve mental health symptoms, behavior problems, or psychopathology; optimize child development and functioning; and/or improve child welfare outcomes, including the following:</p> <ul style="list-style-type: none"> Psychotherapy/psychosocial interventions delivered at the individual, caregiver, and/or family level (including Trauma-Focused Cognitive Behavioral Therapy, Parent-Child Interaction Therapy, Attachment and Biobehavioral Catch-up, the Incredible Years). General and specific types of pharmacotherapy (e.g., selective serotonin reuptake inhibitors [SSRIs]). <p>Strategies or approaches designed to improve the system of care for maltreated children and caregivers at the service-delivery or organizational level were excluded. Examples include intensive family preservation or reunification service models, solution-focused/based casework, differential response, and routine preservice foster parent training programs.</p>
Comparator	<ul style="list-style-type: none"> The comparison condition as defined in the respective studies. Active controls were comparison groups that received another structured intervention. Inactive controls were comparison groups that did not receive another structured intervention.

Table 4. Population, Intervention, Comparator, Timing, Setting (PICOTS) (continued)

Domain	Description
Outcomes	<p>Child well-being outcomes</p> <ul style="list-style-type: none"> • Child mental and behavioral health (e.g., prevention of or reduction in severity or number of traumatic stress symptoms or syndromes; post-traumatic stress disorder (PTSD); attachment disorders; depressive symptoms; anxiety symptoms; disruptive, aggressive, and delinquent behavior) • Healthy caregiver-child relationship (e.g., secure attachment; increased caregiver responsiveness and sensitivity to the child; positive caregiver-child interaction; increased positive attitudes toward childrearing, perceptions of the child and causal attributions about the child's behavior, family functioning) • Healthy development (e.g., cognitive, language, physical) • School-based functioning (e.g., grade retention, disciplinary referrals, attendance) <p>Child welfare outcomes</p> <ul style="list-style-type: none"> • Safety (e.g., prevention of maltreatment recurrence or reduced number of subsequent involvements with child protective services) • Placement stability for children in out-of-home care • Positive permanency outcomes for children in out-of-home care <p>Treatment engagement and adherence</p> <ul style="list-style-type: none"> • Readiness or motivation to engage in an intervention • Treatment completion <p>Adverse events</p> <ul style="list-style-type: none"> • Retraumatization • Caregiver distress
Timing	<ul style="list-style-type: none"> • Short-term duration: postintervention (i.e., at treatment completion) to <6 months • Long-term duration: ≥6 months after treatment completion
Setting	<ul style="list-style-type: none"> • Studies conducted in the United States or internationally • Interventions provided in both specialty service delivery settings (e.g., outpatient and inpatient mental health care settings) and nonspecialty service delivery settings (e.g., schools, community-based providers, shelters, prison or diversion programs) • Home-based and out-of-home care (e.g., foster or kin care, residential treatment, group settings)

Population

The population of interest for this review was children ages 0 to 14 years exposed to maltreatment (using the definitions below), children of the same ages involved with the child welfare system (including foster care), and caregivers of maltreated children when they were the target of an intervention. We used the following definitions for child maltreatment and sexual abuse:

- Child maltreatment—the definition provided by the Centers for Disease Control and Prevention²⁷ includes both child abuse (acts of commission: words or overt actions that cause harm, potential harm, or threat of harm to a child) and child neglect (acts of omission: failure to provide for a child's basic physical, emotional, or educational needs or to protect a child from harm or potential harm). The harm to a child may or may not be the intended consequence.²⁷
- Sexual abuse—the definition provided by the Child Abuse Prevention and Treatment Act²⁸ is the employment, use, persuasion, inducement, enticement, or coercion of any child to engage in, or assist any other person to engage in, any sexually explicit conduct or simulation of such conduct for the purpose of producing a visual depiction of such conduct; or the rape, and in cases of caretaker or interfamilial relationships, statutory rape, molestation, prostitution, or other form of sexual exploitation of children, or incest with children.²⁸

We excluded adolescents older than 14 years of age in the interest of reducing the clinical heterogeneity of the population for this review. This decision reflects attention to the developmental needs and capacities of older adolescents, which represents a markedly distinct developmental period in physical, cognitive, emotional, and social capacities and challenges—including significant independence, the ascendancy of adolescent peers as a key reference group, and increasingly complex interpersonal relationships. The American Academy of Pediatrics' Bright Futures Guidelines for Health Supervision of Infants, Children, and Adolescents differentiates “early adolescence” (11 to 14 years) from “middle adolescence” (15 to 17 years).¹⁶⁵

Some studies included both children who met the inclusion criteria and those who did not; we call this a “mixed” study population. Examples of mixed populations include study samples with too broad an age range (e.g., 0 to 18) and samples that included children with known maltreatment exposure combined with children for whom maltreatment exposure was unknown and who were receiving intervention because of another type of traumatic exposure or the child's challenging behavior. *We recognize that children identified as maltreated and at risk for maltreatment can present similar clinical and risk profiles.*^{67,166,167} However, concerns about clinical heterogeneity of the study population and an interest in producing a report with results generalizable to a clearly defined population led us to exclude studies with a mixed population unless results were stratified in such a way that we could extrapolate findings for the population meeting inclusion criteria of this review. Of note, studies that did not report the age range of children were assumed to include children through age 17 and were therefore excluded.

Interventions

For KQs 1 to 4, and KQ 6, interventions of interest included those with the following aims: prevent, ameliorate, or improve mental health symptoms, behavior problems, or psychopathology; optimize child development and functioning; and/or improve child welfare outcomes. We did not include preventive interventions targeting pregnant women, first-time parents, or other parents with risk factors for child abuse or neglect. Clinical interventions included in this CER include both psychosocial and pharmacotherapy approaches delivered at the individual, child-caregiver (dyadic), and/or family level to address the mental and behavioral health needs of the child and/or the quality of the child-caregiver relationship in support of the child's emotional well-being. Relevant psychosocial interventions include specifically defined treatment components and may also include supportive services such as crisis management and concrete assistance. Due to issues of scope and heterogeneity, strategies or approaches to improve the system of care for maltreated children and caregivers at the service-delivery or organizational level—which were originally considered for inclusion in this review—are excluded. Examples include:

- Child welfare systems case planning and/or management approaches such as differential response (i.e., an alternative assessment model offered by child protective services agencies to families reported for child abuse and neglect depending on the severity of the allegation), solution-focused casework, and investigative decision strategies.
- General categories of services provided to families by the child welfare system such as preservice foster parent training, financial support, respite care, and peer support groups.
- Policy-level interventions in the child welfare system such as subsidized guardianship.

- Cross-systems/systems integration strategies such as interagency collaboration and enhanced case management procedures.
- Court improvement strategies such as accelerated case review, court teams, dependency or drug court court-appointed child advocates, and programs to increase family engagement in the dependency or drug court treatment plan.

For studies involving populations with mental health symptoms, general and specific types of pharmacotherapy are relevant treatment approaches (e.g., selective serotonin-reuptake inhibitors). For KQ 5, we included interventions with the goal of increasing participant engagement to increase retention and patient adherence.

Only interventions that have been studied comparatively with maltreated children and/or their caregivers are included in this review. Intensive family preservation or reunification service models, such as Homebuilders[®], were eligible for inclusion; however, studies examining these approaches focused on families who received services regardless of child age and thus did not meet the age cut-off set. Several well-researched preventive interventions that are widely used in the field (e.g., Nurse Family Partnership, Early Head Start, and Pathways Triple P) and which may be relevant for preventing recurrence, were not included in this review because the intervention explicitly focuses on prevention with families at risk for poor child outcomes.

Comparators

All studies included in this CER had at least two arms. We excluded studies that analyzed differences between three or more groups but did not report the results of pairwise comparisons.

Acceptable comparisons included control groups such as usual care or a wait-list strategy. In addition to wait-list control or usual care, comparators included (a) approaches representative of conventional practice in the field (such as child-centered therapy, support groups, and family therapy), and (b) derivations of interventions (wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified). By derivation, we refer to approaches wherein the authors do not specify the degree to which the original model was implemented and/or modify the core components.

Lastly, we excluded studies comparing the same intervention in different contexts, such as with kin caregivers compared with non-kin caregiver because the study did not directly answer any of the KQs.

Outcomes

All child well-being outcomes that studies reported were assessed using measures for which psychometric data on reliability and validity (beyond face validity) are available in the extant literature. We did not include measures for which basic reliability properties were reported by the author but no further validity data could be readily found in the extant literature. For psychometric information regarding trauma-specific measures, we consulted the National Child Traumatic Stress Network's Measures Review Database. We present the list of included measures in Table 5. As noted in the Introduction, we treat parent-level variables as indicators of the *healthy caregiver-child relationship* outcome in KQ 1. In our results, we differentiate parent self-report outcomes such as attitudes towards corporal punishment, perceptions of child behavior, and parenting practices from direct and objective measures of the quality of the

caregiver-child relationship (observations of parent-child interaction and child attachment behavior).

Table 5. Included measures

Outcome	Measures
Mental and Behavioral Health	<p>Achenbach System of Empirically Based Assessment Cambridge Neuropsychological Test and Automated Battery Child Behavior Checklist Child Report of Post-traumatic Symptoms Child Sexual Behavior Inventory Children's Depression Inventory Children's Impact of Traumatic Events Scale Coping Inventory Cortisol (salivary) values Eyberg Child Behavior Inventory Kiddie Global Assessment Scale Laboratory Temperament Assessment Battery Life Satisfaction Survey Orvaschel PTSD Scale Parent Daily Report Parent Report of Post-traumatic Symptoms Post Traumatic Stress Symptoms Scale Preschool Age Psychiatric Assessment Revised Behavioral Problem Checklist Rutter Teacher Scale Schedule for Affective Disorders and Schizophrenia for School-Aged Children— Present and Lifetime Version Self-Perception Profile for Children Self-Report Delinquency Scale State-Trait Anxiety Inventory for Children Sutter-Eyberg Student Behavior Inventory—Revised Trauma Symptom Checklist for Children</p>
Healthy Caregiver-Child Relationships	<p><u>Direct:</u> Strange Situation procedure HOME: Home Observation Measure of the Environment Child Autonomy Observational Scale Observational Record of the Caregiving Environment Parenting Skills Observation Scale</p> <p><u>Indirect:</u> Adult Adolescent Parenting Inventory Alabama Parenting Questionnaire—Child Alabama Parenting Questionnaire—Parent Beck Depression Inventory Child Abuse Potential Inventory Conflict Tactics Scale—Revised Family Adaptability and Cohesion Evaluation Scale Family Assessment Form Family Functioning Style Scale Impact of Events Scale—Caregiver version MacArthur Story Stem Battery and Narrative Coding Manual—Rochester Revision Maternal Behavior Q-Set McMaster Family Functioning—General Functioning Scale Parent Attachment Diary Parent Daily Report Parent Practices Questionnaire</p>

Table 5. Included measures (continued)

Outcome	Measures
Healthy Caregiver-Child Relationships (continued)	Parenting Locus of Control Scale Parenting Practices Interview Parenting Practices Questionnaire Parenting Self-Agency Measure Parenting Stress Index Perceptions of Adult Attachment Scale Social Support Behaviors Scale Symptom Checklist—Revised (Caregiver)
Healthy Development	Bayley Scales of Infant Development Dimensional Change Card Sort Flanker Task Go/No Go Task Peabody Picture Vocabulary Test Penny Hiding Task Receptive-Expressive Emergent Language Scale Reynell Developmental Language Scale Tool task Wechsler Preschool and Primary Scale of Intelligence Wechsler Intelligence Scale for Children

For KQ 2, we included child welfare outcomes using administrative data from the child welfare system. For KQ 6, an adverse event is defined as a “harmful or undesirable outcome that occurs during or after the use of a drug or intervention but is not necessarily caused by it.”¹⁶⁸ We did not require a validated measure for assessment of adverse events; however, we did require active surveillance of harms.

Timing

We included studies reporting short- or long-term outcomes as defined by the authors. We included end-of-intervention results as well as any follow-up data. Intermediate measures, that is, assessments made between baseline and completion of the intervention, are not included in the report.

Setting

We did not exclude studies based on geography or the setting of service provision.

Study Designs

To identify appropriate study designs, the research team used the algorithm developed by the Alberta EPC.¹⁶⁹ Table 6 describes the study design inclusion criteria developed for this report. All studies were considered efficacy studies unless the study authors clearly identified them as effectiveness trials that were intended to reflect “real world” conditions.¹⁷⁰

Table 6. Study inclusion criteria

Category	Criteria for Inclusion
Study design	Systematic reviews, randomized controlled trials, nonrandomized controlled trials, cohort studies (e.g. prospective and retrospective), and case-control studies
Sample size	N≥10
Study location	United States and international Clinics, community-based agencies, and home-based

Study Selection

Two trained members of the research team independently reviewed all titles and abstracts identified through searches for eligibility against predefined inclusion and exclusion criteria. Abstracts marked for possible inclusion by either reviewer underwent a full-text review. Each full-text article was again independently reviewed by two trained members of the team to determine if it met inclusion criteria. If it did not meet inclusion criteria, each reviewer recorded the reason for exclusion; reviewers resolved disagreements by consensus discussion and consulted a third party if they were unable to reach a consensus. The full-text review form reviewers used is reproduced in Appendix B. If both reviewers agreed that a study did not meet the eligibility criteria, it was excluded. If the reviewers disagreed, they resolved conflicts by discussion and consensus or by consulting a third member of the review team. The project coordinator tracked results of the abstract and full-text reviews in an EndNote database. Appendix C contains a complete list of studies excluded during the full-text review, denoted by primary reason for exclusion.

We screened unpublished studies identified through grey literature search and reviewed scientific information packets using the same title/abstract and full-text review processes.

Data Extraction

A template for evidence tables to be used for data synthesis was developed using the PICOTS framework. For studies that met inclusion criteria, we abstracted relevant information into these evidence tables using Microsoft Excel. We abstracted characteristics of study populations, interventions, comparators, settings, study designs, methods, and results. One trained reviewer abstracted the relevant data from each included article and a second member of the team reviewed each data abstraction against the original article for completeness and accuracy.

Risk of Bias Assessment

For each included study, we assessed the potential for selection bias, performance bias, attrition bias, detection bias, and reporting bias (Table 7). Two independent reviewers rated the risk of bias for each study. Disagreements between the two reviewers were resolved by discussion and consensus or by consulting a third member of the team.

Table 7. Risk of bias assessment questions

Abbreviated Criteria in Table	Full Question	Type of Bias Assessed
Similar at baseline	Were groups similar at baseline?	Selection bias
Fidelity	Were measures taken to ensure intervention fidelity?	Performance bias
Assessor blinded	Were outcome assessors unaware of which intervention the participants received (i.e., blinded)?	Detection bias
All outcomes included	Are all prespecified outcomes reported in the results?	Reporting bias
Measures equally applied	Were outcome measures equally applied?	Detection bias
Attrition reported	Do study authors report either attrition statistic or that all participants who started the study completed the study?	Attrition bias
Attrition $\geq 30\%$	Was the overall attrition for the study $\geq 30\%$?	Attrition bias
Differential attrition $\geq 15\%$	Was the differential attrition between groups $\geq 15\%$?	Attrition bias

Table 7. Risk of bias assessment questions (continued)

Abbreviated Criteria in Table	Full Question	Type of Bias Assessed
QUESTIONS FOR RCTs ONLY		Selection bias
Randomization adequate	Was randomization adequate?	
Allocation concealment	Was the intervention/treatment allocation concealed?	Selection bias
ITT analysis	Did investigators use an intention-to-treat (ITT) analysis?	Attrition bias
QUESTIONS FOR NONRANDOMIZED TRIALS AND OBSERVATIONAL STUDIES		Detection bias
Prospective	Is the study design prospective?	
Same source population	Were groups recruited from the same source population?	Selection bias
I/E criteria	Were inclusion and exclusion criteria equally applied in both groups?	Selection bias
Control for difference	Were differences between groups taken into account in the statistical analysis?	Confounding

Results of this assessment are summarized in a rating of low, medium, or high risk of bias. In general, a study with a low risk of bias has a strong design, measures outcomes appropriately, uses appropriate statistical and analytical methods, reports low attrition, and reports methods and outcomes clearly and precisely. It should be noted that evaluative criteria such as blinded assessment and concealment are less applicable to child welfare outcomes based on administrative data. Studies with a medium risk of bias are those that do not meet all criteria required for low risk of bias but do not have flaws that are likely to cause major bias. Studies with a high risk of bias include those with at least one major weakness that has the potential to cause significant bias and thus we cannot be confident in the validity of results. Examples of flaws leading to a high risk of bias rating include different application of inclusion/exclusion criteria between groups, substantial differences in groups at baseline, high overall attrition, or differential attrition across study conditions. A high risk of bias rating was not assigned to a study merely because critical information was not reported or unclear.¹⁷¹ However, “unclear” methodology was taken into consideration in grading the strength of evidence based on the study (described later in this chapter). Of note, the most recent methods guidance calls for a designation of “unclear risk of bias.” Because a substantial amount of work on this project preceded this recommendation, however, we were unable to apply the unclear risk of bias rating to this evidence base. To maintain a focus on the best available evidence, we opted to exclude from the Results chapter of this CER studies with a high risk of bias. We list each study rated as high risk of bias along with the reason it was rated as such in Appendix D.

Data Synthesis

We analyzed the data qualitatively. Across studies, the populations, interventions, and outcome measures used were heterogeneous and did not lend themselves to a pooled analysis.

The Results chapter of this review is organized by KQ. For each question we have two sections: key points and detailed synthesis. The key points section summarizes the results for each outcome in the KQ; the detailed synthesis section describes the study results.

In the detailed analysis section we report key features of the study and the results for each construct analyzed. Two tables accompany the study narrative: one table outlining key study characteristics and a second summarizing the study results. The study characteristics table

provides the study design, sample size (at baseline), comparison groups, and risk of bias rating. The results table summarizes the within- and between-group differences in the construct measured over time or at the study endpoint. Data on magnitude of effect are also included in the results tables. We report magnitude of effect data provided by authors in the studies reviewed. We did not perform additional effect size calculations, except for one study that provided the effect size without the significance level.

Given the complexity of our analyses, we adopted some conventions for presenting comparative data (Table 8). Statistically significant *within-group* changes are indicated by a superscript “+” or “-”; a “+” indicates improvement on the construct measured; a “-” indicates a detriment. In addition, we designate nonsignificant results with “ns.” Significant *between-group* differences are indicated by a “<” or “>” between group one (G1) and group two (G2). If a study found no between-group differences, we will say “no differences between G1 and G2.”

Table 8. Intervention A versus usual care, results (sample table)

First Author, Year	Comparison Groups	Mental Health Outcomes
Jones et al., 2002	G1: Intervention A G2: Usual care	Changes in Overall Mental Health and Behavior (<i>Child Behavior Checklist</i>) No difference between G1 ⁺ and G2 ^{ns} p=0.66 Changes in Depression (<i>Children's Depression Inventory</i>) G1 ⁺ >G2 ⁻ p=0.04
Jones et al., 2003	G1: Intervention A G2: Usual care	Changes in Traumatic Stress Symptoms (<i>Trauma Symptoms Checklist for Children</i>) G1>G2 p=NR (sig)

Abbreviations: G = group; NR = not reported; ns =within-group change over time p>0.05; sig = significant; + = within-group improvement over time p≤0.05; - = within-group detriment over time p≤0.05

Table 8 shows that, in Jones et al., 2002, the overall mental health and behavior of participants in G1 improved significantly over time while members of G2 did not change significantly on these outcomes. The between-group differences in change over time were not significant (p= 0.66) for this measure. On a measure of depression, G1 showed significant improvements while G2 showed a significant detriment. The between-group differences in change over time (G1>G2) were significant for this measure (p=0.04), favoring participants in G1. In Jones et al., 2003, children in G1 exhibited a significantly greater improvement in traumatic stress symptoms than children in G2 (p=NR, within-group change not reported).

Strength of the Body of Evidence

We graded the SOE based on EPC guidance established for the AHRQ EHC Program, as detailed in a recent paper by Owens and colleagues.¹⁷² The EPC approach incorporates four key domains: risk of bias, consistency, directness, and precision of the evidence.

- Risk of bias is determined according to the “degree to which the included studies for a given outcome or comparison have a high likelihood of adequate protection against bias.” It is graded as high, medium, or low.
- Consistency is the “degree to which reported effect sizes from included studies appear to have the same direction of effect.” It is graded as consistent or nonconsistent. Consistency cannot be assessed when a body of evidence has only a single study (unknown or not applicable). When a body of evidence includes both consistent and

inconsistent findings, the presence of one or more consistent findings will result in a “consistent” grade for the outcome of interest.

- Directness is determined based on “whether the evidence links the interventions directly to health outcomes.” It is graded direct or indirect. In this report, healthy caregiver-child relationship outcomes were predominantly indirect; many measures assessed outcomes indirectly related to the caregiver-child relationship (e.g., parent attitudes toward discipline; parent-related stress) rather than direct observations of parent-child interaction or child attachment behavior. When a body of evidence includes both indirect and direct measures, the presence of one or more direct measures will result in a “direct” grade.
- Lastly, precision is determined according to “the degree of certainty surrounding an effect estimate.” “Precise” indicates a clinically useful conclusion that is statistically significant, and “imprecise” indicates that no conclusion can be drawn as to whether either treatment is superior or whether the treatments are equivalent.

The overall grades for SOE, based on the scores for the above domains, are described in Table 9. Grades reflect the strength of the body of evidence to answer the KQs on the comparative effectiveness, efficacy, and harms of the interventions in this review. In general, bodies of evidence earning a grade of “high” include several studies with a low to medium risk of bias with consistent results directly answering the KQ with precision. A “moderate” SOE grade may result from fewer studies meeting the same criteria (i.e., low/medium risk of bias, direct evidence, consistent and precise results) and also evidence from large effectiveness trials, which leads to increased confidence in the SOE. When evidence supporting an intervention is sparse (2 or fewer studies) the body of evidence is graded as “low.”

Table 9. Definitions of the grades of overall strength of evidence

Grade	Definition
High	High confidence that the evidence reflects the true effect. Further research is very unlikely to change our confidence in the estimate of effect.
Moderate	Moderate confidence that the evidence reflects the true effect. Further research may change our confidence in the estimate of the effect and may change the estimate.
Low	Low confidence that the evidence reflects the true effect. Further research is likely to change our confidence in the estimate of the effect and is likely to change the estimate.
Insufficient	Evidence either is unavailable or does not permit estimation of an effect.

Source: Owens et al., 2010¹⁷²

Lastly, some bodies of evidence do not permit a conclusion because of inconsistent or imprecise results; these bodies of evidence are graded as “insufficient.” For example, in the case of nonsignificant findings, the precision of noninferiority (i.e., that the experimental treatment is not clinically worse than the active control) or equivalence (i.e., that the experimental treatment is clinically similar to the active control) can only be assessed if the study planned and analyzed the data using a prespecified noninferiority or equivalence margin of clinically significant difference with a sufficiently powered sample size to detect that difference.¹⁷³ If a study is not identified as an equivalence or noninferiority trial by the authors, or it is identified as a noninferiority or equivalence trial but the quality or reporting does not permit clear interpretation of the precision of the findings (e.g., sample size calculations are not reported), the body of evidence for the outcome would be graded as insufficient.

Two reviewers assessed each domain independently and also assigned an overall grade for each key outcome listed in the framework; they resolved any conflicts through consensus discussion. If a consensus was not met, the team brought in a third party to settle the conflict. In

the key points section we present the SOE for each comparison and overarching outcome (e.g., mental health and behavior) as defined by the KQs. We then explain the SOE grade in the detailed synthesis and also provide a table summarizing the SOE grading.

Applicability

We assessed the applicability both of individual studies and of the body of evidence.¹⁷² For individual studies, we examined conditions that may limit applicability based on the PICOTS structure. Examples of characteristics examined include:

Population

- Narrow eligibility criteria, or exclusion of patients with comorbidities.
- Large differences between the demographics of the study population and community patients.

Intervention

- Intensity and delivery of interventions that may not be feasible for routine use.
- Highly selected intervention team or level of training/proficiency not widely available.

Comparators

- Comparison group does not represent an available alternative treatment.

Such conditions may be associated with heterogeneity of treatment effect and the ability to generalize the effectiveness of an intervention to use in everyday practice. We abstracted key characteristics of applicability into evidence tables.

During data synthesis, we assessed the applicability of the body of evidence using the abstracted characteristics. KQ 4 includes a detailed analysis of intervention efficacy in population subgroups.

Peer Review and Public Commentary

Experts in children's mental health, specifically psychosocial development, maltreatment exposure, and evidence-based interventions, were invited to provide external peer review of this CER. AHRQ and an associate editor also provided comments. The draft report was posted on the AHRQ Web site for 4 weeks to elicit public comment. We responded to all reviewer comments and noted any resulting revisions to the text in the "Disposition of Comments Report." This report will be made available 3 months after the final CER is posted on the AHRQ Web site.

Results

Introduction

This chapter presents the results of the literature searches, followed by results for each key question (KQ). KQ 1 presents evidence on mental and behavioral health, caregiver-child relationship, and developmental outcomes (no study addressed school functioning). KQ 2 presents evidence for outcomes relevant to the child welfare system: safety, placement stability, and permanency. KQ 3 (on intervention characteristics) and KQ 4 (on subgroups of the population) are cross-cutting questions that draw upon available evidence from KQ 1 and KQ 2. KQ 5 presents evidence on how interventions compare on treatment engagement (that is, motivation or readiness to engage in an intervention and treatment adherence). KQ 6 presents evidence on harms.

At the start of each KQ section, we describe how the section is organized; however, all KQ sections include the following elements:

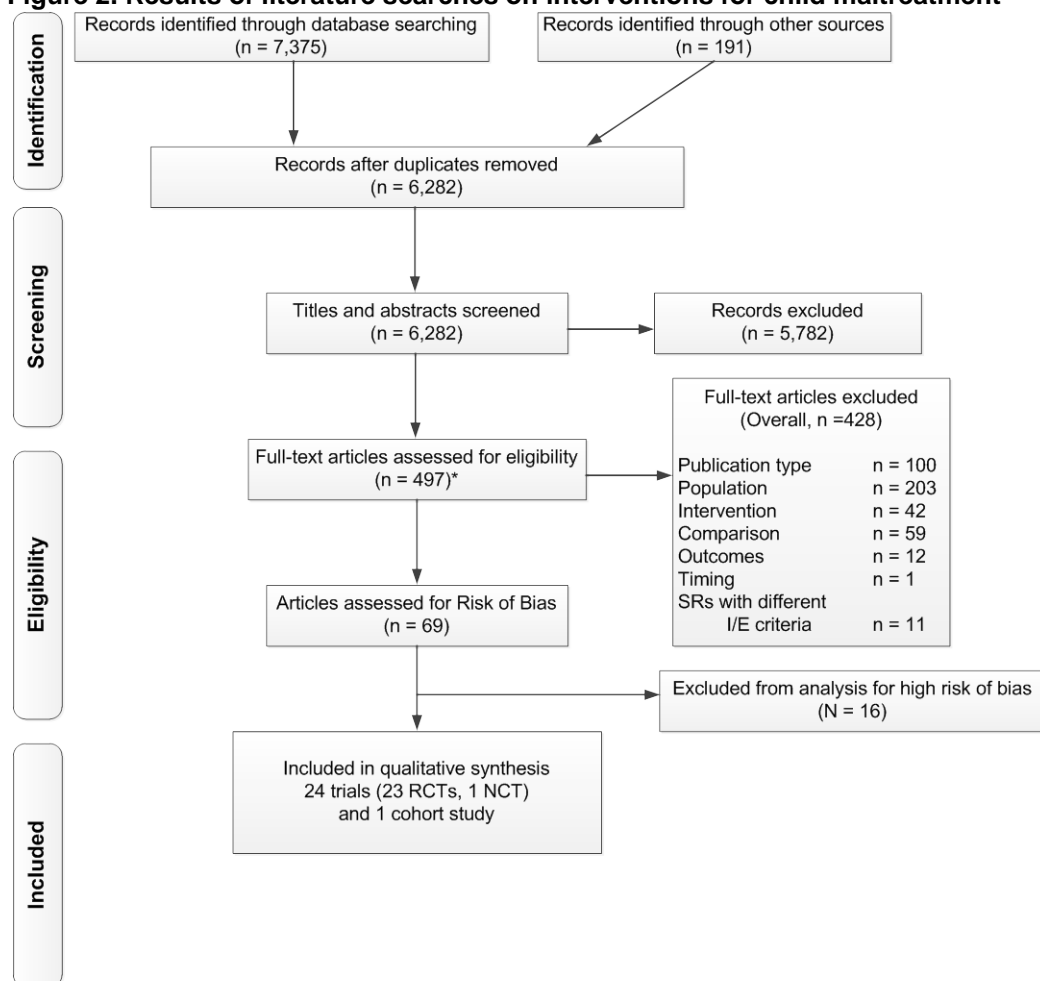
- Key points and the strength of evidence (SOE) grade for each outcome relevant to the KQ in question, referring to the specific constructs measured to which the evidence pertains.
- A detailed synthesis which briefly summarizes the results of each comparison and also provides: (a) a table describing the study characteristics of each trial, including the risk of bias rating (see Risk of Bias Assessment in the Methods chapter); (b) a results table presenting the *between-group differences in changes and differences at study endpoint with benefit denoted using a greater sign* (“>”) and statistically significant within-group changes for each study denoted as improvement (“+”), detriment (“-”), or nonsignificant change (“ns”) for studies that provided these data; and (c) a table presenting the SOE by grading domain (risk of bias, consistency, directness, and precision).
- A summary table presenting overall findings for each outcome relevant to the KQ in question. We order the results in the summary tables alphabetically.
- We report magnitude of effect data provided by authors in the studies reviewed. We did not perform additional effect size calculations with the exception of one study that provided effect sizes in the form of relative risk reduction without the significance level.¹³⁰ Effect sizes were not reported universally across all studies included in this review and confidence intervals and mean differences were rarely reported.

Results of the Literature Searches

The results of literature searches are presented in Figure 2. Our initial universe of articles (unduplicated) totaled 6,282; we excluded 5,782 at the title and abstract review stage. For the 497 articles reviewed at the full-text stage, we eliminated 428 for a variety of reasons. We recorded the reason for excluding full-text publications; Appendix C lists these, organized by reason for exclusion. The most common reasons for exclusion at the full-text level were (1) the study included children outside of the target age range (0 to 14) or the study’s focus was on children at risk for maltreatment based on sociodemographic characteristics (e.g., living in poverty, first-time parents) (wrong population), (2) systems- or service-delivery level approaches (wrong intervention), or (3) a lack of a comparison group (wrong comparison). After assessing risk of bias for 69 included articles (before data abstraction), we eliminated 16 articles including

outcomes that we rated high risk of bias. This left a total of 25 studies, reported in 53 articles, which included outcomes that were assessed as either medium or low risk of bias. The majority (N=23) of these studies were randomized controlled trials (RCTs), one was a nonrandomized controlled trial, and one was a nonconcurrent cohort study.

Figure 2. Results of literature searches on interventions for child maltreatment



*we were unable to access the FT of three articles

Abbreviations: I/E = inclusion/exclusion; NCT = nonrandomized controlled trial; RCT = randomized controlled trial

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(6): e1000097. doi:10.1371/journal.pmed1000097

For more information, visit www.prisma-statement.org.

Overall Description of Studies

Population

Populations targeted by the studies in this comparative evidence review included children ranging from 0 to 14 years old who had been exposed to maltreatment or were involved with the child welfare system. Many of the studies empirically assess an intervention within a population subgroup. Population subgroups include children in particular age groups (early childhood,

middle childhood, or early adolescence), children exposed to specific types of maltreatment (neglect, physical or sexual abuse), or children with trauma symptoms or other special health care needs. Caregiver subgroups were also particularly salient (i.e., trials that assessed interventions for the biological [maltreating] parent or targeting foster parents).

Intervention

We identified 20 unique interventions (Table 10) that were assessed with the included population. We categorized the interventions as parenting interventions (N=9), trauma-focused treatments (N=6), or enhanced foster care interventions (N=5). One intervention was designed to promote treatment engagement and retention (N=1). Each of the interventions included in this review is described in Tables 1, 2, and 3 in the Introduction. Many of the interventions included components directed at the biological or foster parent, either with or without the child's participation. In addition to the parenting interventions, 3 (57%) of the trauma-focused and 4 (80%) of the enhanced foster care interventions include a caregiver component. Only 3 interventions were solely child-focused.

Table 10. Total number of studies (trials and cohort studies)

Intervention	Trials	KQ 1	KQ 2	KQ 3	KQ 4	KQ 5	KQ 6
<i>Parenting Interventions</i>	<i>Total = 13</i>	10	5	2	10	-	-
Attachment and Biobehavioral Catch-up	3	3	-	2	3	-	-
Attachment-based Intervention	1	1	-	-	1	-	-
Child-Parent Psychotherapy	2	2	-	-	2	-	-
Incredible Years CoParenting Adaptation	1	1	-	-	-	-	-
Keeping Foster and Kinship Parents Trained and Supported	1	1	1	-	1	-	-
Nurse-Home Visitation	1	1	1	-	-	-	-
Parent-Child Interaction Therapy Adaptation Package	2	-	2	-	2	-	-
SafeCare	1	-	1	-	1	-	-
Videotape Intervention	1	1	-	-	-	-	-
<i>Trauma-Focused Treatments</i>	<i>Total = 7</i>	7	-	1	5	-	1
Combined Parent-Child Cognitive Behavioral Therapy	1	1	-	-	1	-	-
Eye Movement Desensitization and Reprocessing	1	1	-	-	-	-	-
Group Psychotherapy for Sexually-Abused Girls	1	1	-	-	1	-	-
Group Treatment Program for Sexual Abuse	1	1	-	-	1	-	-
Trauma-Focused Cognitive Behavioral Therapy	2	2	-	1	2	-	1
Trauma-Focused Cognitive Behavioral Therapy Group Adaptation	1	1	-	-	-	-	-
<i>Enhanced Foster Care Interventions</i>	<i>Total = 5</i>	4	4	-	5	-	-
Bucharest Early Intervention Project	1	1	-	-	1	-	-
Fostering Healthy Futures	1	1	1	-	1	-	-
Middle School Success	1	1	1	-	1	-	-
Multidimensional Treatment Foster Care-Preschoolers	1	1	1	-	1	-	-
New Orleans Intervention	1 ^a	-	1 ^a	-	1 ^a	-	-
<i>Treatment Engagement Interventions</i>	<i>Total = 1</i>	-	-	-	-	1	-
Motivational Intervention	1 ^b	-	-	-	-	1	-
Total Unique Studies	25						

^aCohort study

^bMotivational Intervention was assessed as part of a trial testing the Parent-Child Interaction Therapy Adaptation Package.

Abbreviation: KQ = key question

Comparator

The most common comparator in the included studies was usual care (N=13 studies), followed by active (N=10 trials) and inactive (N=4 trials) control groups. We categorized the active comparators as either interventions representative of *conventional practices* in the field (family, child-centered, or supportive group therapy) (used in 3 trials), or *derived approaches*. The derived comparators were either (a) modified versions of an intervention model in which the degree of fidelity to the original model was not specified by the authors (used in 5 trials), or (b) developed by the study authors to control for nonspecific aspects of the experimental intervention (2 trials).

Outcomes

Of the unique outcome domains reported in KQ 1, the most commonly assessed was children's mental and behavioral health (N=20 trials), followed by healthy caregiver-child relationship outcomes (N= 15 trials). Very few trials reported developmental outcomes such as cognitive or language development (N=3 trials) and none reported on school-based functioning. Fewer trials reported child welfare (KQ2) outcomes. Five examined safety (i.e., maltreatment recurrence), four examined placement stability, and four examined permanency outcomes. Treatment engagement (KQ5) was the focus of only one trial, for one of the included interventions. Adverse events (KQ6) were sparsely reported, with active surveillance of harms described for only one trial.

No new outcomes are reported in KQs 3 or 4 as these questions summarize the evidence for KQs 1 and 2 by intervention characteristic (KQ 3) and population subgroup (KQ 4).

Timing

Most studies assessed outcomes immediately postintervention or shortly thereafter. Few studies assessed long-term outcomes.

Setting

The vast majority of the studies were conducted in the United States. Several studies were conducted in other high-income countries, specifically Canada (N=2) and the United Kingdom (N=1). Two studies were conducted in countries with substantial cultural differences compared with the United States, specifically Iran (N=1) and Romania (N=1).

Key Question 1. Comparative Effectiveness of Interventions for Improving Child Well-Being Outcomes

Organization

We organize key question (KQ) 1 by intervention type (parenting, trauma-focused, and enhanced foster care approaches), as described in Tables 1 through 3. We begin this section with a description of included studies and an accompanying table presenting the number of trials and articles investigating child welfare outcomes by intervention type. Next, for each subsection, we begin with an overview of key features of the evidence base for the intervention type and then present the findings for each intervention. Findings include very brief key points presenting the main findings for KQ outcomes and the corresponding strength of evidence (SOE) grade.

Immediately following the key points is a detailed synthesis of the findings for each intervention, providing information about study characteristics, the specific results (including magnitude of effect, if provided by study authors), and the SOE by grading domain (risk of bias, consistency, directness, and precision). Please refer to the Strength of Evidence Grading section in the Methods chapter for further detail about the SOE grading criteria. Finally, we close each section with a summary table presenting overall findings for each outcome relevant to the KQ in question, organized alphabetically by intervention name.

We remind the reader that benefit is denoted in the results tables using a greater (“>”) sign (e.g., Group 1 > Group 2). Also, the results tables present within-group changes denoted as improvement (“+”), detriment (“-”), or nonsignificant change (“ns”) for studies that provided these data.

Parenting Interventions

Description of Included Studies

Table 11 presents the 10 trials (15 articles) evaluating parenting interventions included in KQ 1.^{77-83,85-89,91,93,101}

Table 11. Numbers of trials and articles investigating child well-being outcomes: Parenting interventions

Intervention	Trials
Attachment and Biobehavioral Catch-up ^{77-83,85}	3 ^a
Attachment-based Intervention ⁸⁶	1
Child-Parent Psychotherapy ^{87,88}	2
Incredible Years CoParenting Adaptation ⁸⁹	1
Keeping Foster and Kinship Parents Trained and Supported ⁹¹	1
Nurse Home Visitation Intervention ⁹³	1
Videotape Intervention ¹⁰¹	1
Total	10

^aReported in 8 articles.

Below we provide an overview of the key features in the body of evidence for parenting interventions.

- All 10 trials were randomized controlled trials (RCTs).
- Two studies met the criteria for an effectiveness trial.^{91,93}
- Five trials targeted maltreating parents^{81-83,86-88,93}
- One trial targeted the nonoffending mother of children undergoing forensic evaluation for sexual abuse.¹⁰¹
- Three trials targeted foster parents.^{77-80,85,91}
- One trial was directed at foster and biological parents together.⁸⁹
- Five trials focused on early childhood.^{77-79,81-83,85-88}
- Six trials compared the experimental intervention with a usual care condition.^{86-89,91,93}
- One trial used a wait-list control group.⁸⁰
- Four trials employed active control group comparators that were derived approaches.^{77-79,81-83,85,87,88}
- Eight trials reported mental and behavioral health outcomes.^{77,78,80,82,83,86,89,91,93,101}
- Nine of 10 trials reported caregiver-child relationship outcomes.^{11-83,85-89,91,93}

- Seven trials reported on *indirect indicators* of the caregiver-child relationship (e.g., caregiver attitudes towards parenting; parenting practices, including the use of positive discipline; caregiver report of child attachment behavior; caregiver stress and emotional distress).^{80,86-89,91,93,101}
- Four trials reported on *direct indicators* (i.e., objective observational assessment) of parent interactional behavior or of child attachment behavior.^{79,81,86,87}
- One trial assessed developmental outcomes.⁸⁵
- No trials assessed school-based functioning outcomes.

Attachment and Biobehavioral Catch-up

We identified two RCTs, reported in 8 articles, comparing Attachment and Biobehavioral Catch-up (ABC), a low-intensity home-based relational intervention, with an active control. The comparator was a home-based intervention focused on children's cognitive and linguistic development derived from the Abecedarian early intervention program.^{174,175} We also identified one RCT, reported in 1 article, comparing ABC with wait-list control (Table 12). One trial targeted foster parents caring for infants and toddlers^{77-79,85} and the other targeted biological parents.⁸¹⁻⁸³ The ABC trial with a wait-list control targeted foster parents caring for children birth to 6 years.⁸⁰

Table 12. Attachment and biobehavioral catch-up: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Dozier et al., 2006; ⁷⁷ Dozier et al., 2008; ⁷⁸ Dozier et al., 2009; ⁷⁹ Lewis-Morrarty et al, 2012 ⁸⁵	Foster parents and young children in their care (3.6 to 39.4 months)	RCT 14 weeks ^a	G1: ABC G2: Active control	G1: 46 G2: 47 Overall N=93 ^a	Medium
United States					
Bernard et al. 2012; ⁸¹ Dozier et al., unpublished study A; ⁸³ Dozier et al., unpublished study B ⁸²	Parents involved with CPS (diversion program) and their young children (1.7 to 21.4 months; mean = 10.1 (6.0))	RCT 14 weeks ^a	G1: ABC G2: Active control	G1: 60 G2: 60 Overall N=120 ^b	Medium
United States					
Sprang et al., 2009 ⁸⁰	Foster parents and young children in their care (0 to 6 years; mean age = 42.5 months)	RCT 10 weeks	G1: ABC G2: Wait list	G1: 29 G2: 29	Medium
United States					

^aDozier et al., 2009: timing of assessment not specified and N = 46; Dozier et al., 2008: timing of assessment not specified and N = 60; Lewis-Morrarty et al., 2012: follow-up assessment at child age 4 to 6 years and N = 37.

^bDozier et al. unpublished A: N = 114.

Abbreviations: ABC = Attachment and Biobehavioral Catch-up; CPS = Child Protective Services; G = group; N = number; RCT = randomized controlled trial.

Key Points

- **Mental and behavioral health:**
 - Compared with an active control, children whose caregivers participated in ABC exhibited significantly more normative diurnal cortisol regulation (foster and biological parents) and less negative emotionality (biological parents); however, no

- significant difference in efficacy was found for ABC for parent report of child behavioral problems (low SOE of benefit).^{77,78,82,83}
 - Compared with a wait-list control, foster parents who participated in ABC reported significantly greater improvement in child internalizing and externalizing behavior (low SOE of benefit).⁸⁰
- **Healthy caregiver-child relationship:**
 - Compared with an active control, children whose caregivers (foster or biological) participated in ABC exhibited significantly more positive attachment behaviors (low SOE of benefit).^{79,81}
 - Compared with a wait-list control, foster parents who participated in ABC had greater improvement in parent attitudes and greater reductions in parent stress (low SOE of benefit).⁸⁰
- **Healthy development:**
 - Compared with an active control, children whose foster parents participated in ABC exhibited higher levels of cognitive functioning (low SOE of benefit).⁸⁵

Detailed Synthesis

Table 13 presents the results for the two ABC trials; additional study details are provided in the evidence tables (Appendix E).^{77-79,85} An initial article reporting findings from the first trial, targeting foster parents, examined children's diurnal production of cortisol and parent report of children's problem behaviors (child age 3 months to approximately 3 years). The authors measured cortisol, as neuroendocrine dysregulation is one of the primary targets of ABC (the other is the caregiver-child attachment relationship). Cortisol is an indicator of neurobiological response to stress and serves as a proxy indicator of regulation and functioning of the hypothalamic-pituitary-adrenal (HPA) axis, itself activated by physical and psychological stressors. Children in the ABC group exhibited more normative cortisol regulation than children in the control condition, although the timing of assessment was not specified and baseline cortisol measures were not reported. No significant differences were found for parent report of children's behavioral problems.

A second article reporting findings from the trial with foster parents examined cortisol outcomes on a subset of children, age 15 to 24 months.⁷⁸ As in the previous article, children who participated in ABC exhibited more normative patterns of cortisol regulation compared with the control condition.⁷⁸ The authors also examined changes in cortisol levels after a stressful separation-reunion procedure but found no significant differences for cortisol values in response to the stressful procedure by study arm. A third article⁷⁹ reporting findings from this same trial examined parent reports of children's attachment behavior. Foster parents who participated reported that children exhibited less avoidant attachment behavior compared with the active control; however, there were no significant differences in efficacy of the intervention on children's secure attachment behavior. Finally, a fourth study examined cognitive development outcomes at age 4 to 6 years among children who had participated in the ABC intervention compared with the control group. This study found that children in the ABC condition exhibited significantly greater cognitive flexibility and theory of mind skills compared with children who had participated in the control condition.⁸⁵

Table 13. Results: Attachment and biobehavioral catch-up versus active control

First Author et al., Year	Comparison Groups	Mental and Behavioral Health	Healthy Caregiver-Child Relationship	Healthy Development
Dozier et al, 2006 ⁷⁷	G1: ABC G2: Active control	Lower cortisol levels G1>G2, p<0.001 Behavioral problems (parent daily report) No differences between G1 and G2, p=0.71	NA	NA
Dozier et al, 2008 ⁷⁸	G1: ABC G2: Active control	Lower cortisol levels G1>G2, p<0.05 Change in cortisol before and after strange situation No differences between G1 and G2, p=NS (NR)	NA	NA
Dozier et al, 2009 ⁷⁹	G1: ABC G2: Active control	NA	Fewer reports of avoidant attachment behavior (parent attachment diary) G1>G2, p=0.030 Secure attachment behavior (parent attachment diary) No differences between G1 and G2, p=0.379	NA
Lewis-Morrarty et al., in press ⁸⁵	G1: ABC G2: Active control	NA	NA	Cognitive flexibility (dimensional change card sort) G1>G2, p=.008 Theory of mind (penny hiding task) G1>G2, p=.01
Bernard et al., 2012 ⁸¹	G1: ABC G2: Active control	NA	Decreased proportion with disorganized attachment (strange situation) G1>G2, p < .01 Increased proportion with secure attachment (strange situation) G1>G2, p<.05	
Dozier et al., unpublished A ⁸³	G1: ABC G2: Active control	Negative emotional expressivity (the tool task) G1>G2, p<.05	NA	NA
Dozier et al., unpublished B ⁸²	G1: ABC G2: Active control	More normalized patterns of cortisol production G1>G2, p=sig (NR)	NA	NA

Note: Greater comparative benefit is denoted using a greater (“>”) sign.

Abbreviations: ABC = Attachment and Biobehavioral Catch-up; G = group; N = number; NR = not reported; NS = not specified; RCT = randomized controlled trial.

Three articles report findings from a second trial which used the same comparator as in the previously described trial but targeted biological parents. In one paper, the authors found a significantly lower proportion of disorganized attachments and increased proportion of secure attachment among children in the ABC group following the intervention.⁸¹ Another article found

that ABC children expressed less angry feelings following a series of challenging tasks.⁸³ In a third paper, the authors indicated that ABC children exhibited significantly more normalized patterns of cortisol production than control children.⁸²

Table 14 presents the results of the ABC trial with foster parents compared with wait-list control; additional study details are provided in the evidence tables (Appendix E).⁸⁰ The authors describe the study as combining elements of efficacy and effectiveness studies by applying specific components of an RCT to a clinic-based setting with a “naturally occurring treatment-seeking population.”^{80,p82} The study explicitly focused on children who had experienced severe maltreatment resulting in termination of parental rights and disruptions in their primary attachment relationships. An eligibility criterion for inclusion in the study was treatment readiness (families were prescreened for readiness prior to randomization). The authors examined child internalizing and externalizing behavior problems, parenting attitudes reflective of child abuse potential, and parenting stress with widely used and highly validated measures. A detailed summary of the results is provided in Appendix E. Compared with foster parents in the wait-list condition, participants in ABC reported significant improvements in child internalizing and externalizing problems (low and medium effect sizes, respectively) and reduction in negative parenting attitudes, practices associated with child abuse (large effect size), and parenting stress (medium effect size).

Table 14. Results: Attachment and biobehavioral catch-up versus wait list

First Author et al., Year	Comparison Groups	Mental and Behavioral Health	Healthy Caregiver-Child Relationship
Sprang et al., 2009 ^{80a}	G1: ABC G2: Wait list	<p>Improvements in internalizing behavior (Child Behavior Checklist-Internalizing subscale) G1⁺>G2⁺, p=0.01, partial eta squared =0.436</p> <p>Improvements in externalizing behavior (Child Behavior Checklist-Externalizing subscale) G1⁺>G2⁺, p=0.001, partial eta squared =0.511</p>	<p>Improvements in self-reported risk factors for child abuse (Child Abuse Potential Inventory) G1⁺> G2⁺, p=0.001, partial eta squared =0.791</p> <p>Improvements in parent stress (Parent Stress Inventory) G1⁺> G2⁺, p=0.01, partial eta squared =0.59</p>

^a intention-to-treat (ITT) analysis.

Note: Greater comparative benefit is denoted using a greater (“>”) sign. We use the interpretation of partial eta squared effect sizes provided in Sprang et al., 2009.

Abbreviations: ABC = Attachment and Biobehavioral Catch-up; G = group;

Although the ABC trials yielded promising results, we graded the SOE as low for both mental and behavioral health and caregiver-child relationship outcomes due to the presence of only two trials (Table 15). As explained previously (see Methods), when evidence supporting an intervention is sparse (i.e., ≤ 2 studies) the body of evidence is graded as low. We graded the SOE in the study comparing ABC with wait-list control as low due to the presence of the single, small, quasi-effectiveness study.

Table 15. Detailed strength of evidence grading table: Attachment and biobehavioral catch-up

Intervention and Comparator	Outcome	Studies; Subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of Effect
ABC vs. Active Control ^a	Mental and behavioral health	2 RCTs ^{77,78,82,83} ; 213	M	Consistent	Direct	Precise	Low; NR
	Healthy caregiver-child relationship	2 RCTs ^{79,81} ; 166	M	Unknown, single study	Indirect	Precise	Low; NR
	Healthy development	1 RCT ⁸⁵ ; 37	M	Unknown, single study	Indirect	Precise	Low; NR
ABC vs. Wait list	Mental and behavioral health	1 RCT ⁸⁰ ; 58	M	Unknown, single study	Direct	Precise	Low; medium (partial eta squared=0.436 or 0.511)
	Healthy caregiver-child relationship	1 RCT ⁸⁰ ; 58	M	Unknown, single study	Indirect	Precise	Low; medium or large (partial eta squared=0.59 or 0.791)

^aActive comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

Note: All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. We use the interpretation of partial eta squared effect sizes provided in Sprang et al., 2009.⁸⁰ We include an effect size range when more than two effect sizes are reported.

Abbreviations: M = medium; NR = not reported; RCT = randomized controlled trial; SOE = strength of evidence.

Attachment-Based Intervention

We identified one RCT comparing another low-intensity, home-based intervention with usual care, referred to here as an “Attachment-based Intervention”⁸⁶ (Table 16). The authors describe this intervention as being loosely based on Attachment and Biohavioral Catch-up along with other attachment-oriented approaches described in the literature. The study spanned infants to preschool-aged children and their biological mothers or fathers. The study assessed children’s internalizing and externalizing behavior, maternal sensitivity, and attachment behavior using direct measures.

Table 16. Attachment-based intervention: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Moss et al., 2011 ⁸⁶ Canada	Maltreated children ages 12 to 71 months and either their biological mother or father	RCT 8 weeks	G1: Attachment-based Intervention G2: Usual care	G1: 40 G2: 39 Overall N=79	Medium

Abbreviations: G = group; N = number; RCT = randomized controlled trial.

Key Points

- **Mental and behavioral health:** There were no significant differences in efficacy of the intervention on child internalizing or externalizing behavior (insufficient SOE).⁸⁶
- **Healthy caregiver-child relationship:** Participants in the Attachment-based Intervention demonstrated significant improvements in maternal sensitivity and secure attachment behavior compared with usual care (low SOE of benefit).⁸⁶

Detailed Synthesis

Table 17 presents the results for the one RCT evaluating this intervention; additional study details are provided in the evidence tables. The study found no statistically significant difference in child internalizing or externalizing behavior problems by study arm. However, the intervention did demonstrate efficacy in maternal sensitivity and child attachment outcomes, reporting small to medium effect sizes.

Table 17. Results: Attachment-based intervention versus usual care

First Author et al., Year	Comparison Groups	Mental and Behavioral Health	Healthy Caregiver-Child Relationship
Moss et al., 2011 ⁸⁶	G1: Attachment-based Intervention G2: Usual care	<p>Improvement in internalizing problems (Child Behavior Checklist-Internalizing subscale) No difference between G1 and G2, p=NS</p> <p>Improvement in externalizing problems (Child Behavior Checklist -Externalizing subscale) No difference between G1 and G2, p=NS</p>	<p>Improvements in maternal sensitivity (Maternal Behavior Q-set) G1>G2, p<0.05, d=0.47</p> <p>Proportionally more changes from insecure to secure attachments (strange situation) G1>G2, p<0.05, r=0.36</p> <p>Proportionally more changes from disorganized to organized attachments (strange situation) G1>G2, p<0.05, r=0.37</p>

Note: Greater comparative benefit is denoted using a greater (“>”) sign. Cohen’s d effect size index of the difference between groups means: 0.20 = small; 0.50 = medium; 0.80 = large. The correlational coefficient r is an effect size index measure of association; we refer to Cohen’s suggested guidelines for interpreting magnitude of effect: 0.10 = small; 0.30 = medium, 0.50 = large.¹⁷⁶

Abbreviations: G = group; NS = not significant

We graded the SOE as insufficient for mental and behavioral health outcomes due to lack of statistical significance (Table 18). We graded the SOE as low for caregiver-child relationship outcomes because of the presence of a single study.

Table 18. Detailed strength of evidence grading table: Attachment-based intervention

Intervention and Comparator	Outcome	Studies; Subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of Effect
Attachment-based Intervention vs. Usual Care	Mental and behavioral health	1 RCT; ⁸⁶ 79	M	Unknown, single study	Direct	Imprecise	Insufficient
	Healthy caregiver-child relationship	1 RCT; ⁸⁶ 79	M	Unknown, single study	Direct	Precise	Low; small to medium (d=0.47, r=0.36 or 0.37)

^aAll results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as: Cohen's $d = 0.20, 0.50$, and 0.80 and correlation coefficient $r = 0.10, 0.30$, and 0.50 .¹⁷⁶

Abbreviations: M = medium; RCT = randomized controlled trial; SOE = strength of evidence.

Child-Parent Psychotherapy

We identified two RCTs that compared CPP, a high-intensity home-based intervention, with an active control and also with usual care (Table 19).^{87,88} One RCT targeted 12-month-old infants and mothers; the other trial targeted 4-year-old children and mothers. The results of these two RCTs pertain to Cicchetti and colleagues' variant of CPP. Both studies used the same active comparator, a psychoeducational intervention derived from Olds and colleagues' nurse home visitation model.⁹⁴

Table 19. Child-parent psychotherapy: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Toth et al., 2002 ⁸⁸ United States	Children ages 4 years in maltreating families	RCT 1 year (child age 5 years)	G1: CPP G2: Active control G3: Usual care	G1: 23 G2: 34 G3: 30 Overall N=87	Medium
Cicchetti et al., 2006 ⁸⁷ United States	Infants ages 12 months in maltreating families (mean age 13.1 months, SD=0.81)	RCT Approximately 13 months (child age 26 months)	G1: CPP G2: Active control G3: Usual care	G1: 53 G2: 49 G3: 35 Overall N=137	Medium

Abbreviations: CPP = Child-Parent Psychotherapy; G = group; N = number; RCT = randomized controlled trial; SD = standard deviation.

Key Points

- **Healthy caregiver-child relationship:**
 - Preschool-age children who participated in CPP reported significantly fewer negative attachment representations compared with an active control⁸⁸; however, for younger children, there were no significant differences in efficacy of the intervention on secure attachment behavior (insufficient SOE).⁸⁷
 - When compared with usual care, infants who participated in CPP demonstrated significantly greater improvements in secure attachment behavior and preschool-age children reported significantly fewer negative attachment representations (low SOE of benefit).^{87,88}

Detailed Synthesis

Based on the comparisons, we graded the SOE as insufficient for caregiver-child relationship outcomes due to nonsignificant findings in one study and inconsistent findings across the two studies (Table 20). Based on the inactive control comparisons, we graded the SOE as low for caregiver-child relationship outcomes due to the presence of only two trials, one of which used an indirect measure with most subscales showing nonsignificant differences.

Table 20 presents the results for the two CPP trials; additional study details are provided in the evidence tables (Appendix E). In the initial trial with preschool-age children and their mothers,⁸⁸ the authors examined child mental representations of the child-parent attachment relationship. Children's mental representations were predominantly maladaptive and negative at baseline across study conditions. The study found a significant decline in children's negative mental representations in the CPP group compared with the active control. However, only trends or nonsignificant differences were found for the other subscales of the outcome measure. The authors did not report effect sizes. The other trial, conducted with mother-infant pairs,⁸⁷ found no significant differences in efficacy of the intervention on children's secure attachment by study arm; the nonsignificant difference was based on a direct measure of attachment. This study also found nonsignificant differences between the CPP and active control group on a direct measure of maternal sensitivity and several self-report measures of parenting (e.g., parenting attitudes, child-rearing stress, and social support).

In the Toth et al. trial with preschoolers,⁸⁸ comparisons between CPP and the usual care study arm demonstrated significant improvement in children's negative mental representations but, again, no other significant differences for the other subscales on the measure. The second study⁸⁷ found significant improvements in secure child attachment in the CPP group compared with usual care, with predominantly large effect sizes. The study did not report comparisons between CPP and usual care on maternal measures.

Based on the comparisons, we graded the SOE as insufficient for caregiver-child relationship outcomes due to nonsignificant findings in one study and inconsistent findings across the two studies (Table 21). Based on the inactive control comparisons, we graded the SOE as low for caregiver-child relationship outcomes due to the presence of only two trials, one of which used an indirect measure with most subscales showing nonsignificant differences.

Table 20. Results: Child-parent psychotherapy versus active control versus usual care

First Author et al., Year	Comparison Groups	Healthy Caregiver-Child Relationship
Toth et al, 2002 ⁸⁸	G1: CPP G2: Active control G3: Usual care	<p>Greater decline in negative self-representations (MacArthur Story Stem Battery; Narrative Coding Manual-Rochester Revision) G1⁺>G2^{ns}, p<0.01 G1⁺>G3^{ns}, p<0.01</p> <p>Trend towards greater increase in positive self-representations (MacArthur Story Stem Battery; Narrative Coding Manual-Rochester Revision) G1⁺>G2^{ns}, p<0.10, trend</p> <p>Trend towards greater decrease in maladaptive maternal representations (MacArthur Story Stem Battery; Narrative Coding Manual-Rochester Revision) G1⁺>G3^{ns}, p<0.10, trend</p> <p>Changes in adaptive maternal representation and false self-representation (MacArthur Story Stem Battery; Narrative Coding Manual-Rochester Revision) No differences between G1, G2, and G3 p=NR (ns)</p>
Cicchetti et al, 2006 ⁸⁷	G1: CPP G2: Active control G3: Usual care	<p>Higher rates of secure attachment * (strange situation) G1>G3, p=<0.01 G2>G3, p=<0.01 both, h=1.16 to 1.39 No difference between G1 and G2 p=NR (ns)</p> <p>Higher rates of becoming securely attached* (strange situation) G1>G3, p<0.01, h=1.34 G2>G3, p<0.01, h=1.16 No difference between G1 and G2, p=ns (NR)</p> <p>Lower rates of stable disorganized attachment* (strange situation) G1>G3, p=0.01, h=0.83 G2>G3, p=0.025, h=0.64 No difference between G1 and G2, p=NR (ns)</p> <p>Change in maternal variables (Perceptions of Adult Attachment Scale; Maternal Behavior Q-Set; Adult-Adolescent Parenting Inventory; Social Support Behaviors Scale; Parenting Stress Index) No difference between G1 and G2; all p=ns (NR)</p>

^a intention-to-treat (ITT) analysis

Note: Greater comparative benefit is denoted using a greater (“>”) sign. Cohen’s h is an effect size index of the difference between proportions: 0.20 = small; 0.50 = medium; 0.80 = large.¹⁷⁶

Abbreviations: CPP = Child-Parent Psychotherapy; G = group; NR = not reported; NS = not significant; SOE = strength of evidence.

Table 21. Detailed strength of evidence grading table: Child-parent psychotherapy

Intervention and Comparator	Outcome	Studies; Subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of Effect
CPP vs. Active Control ^a	Healthy caregiver-child relationship	2 RCTs ^{87,88} ; 159	M	Inconsistent	Direct	Imprecise	Insufficient
CPP vs. Usual care	Healthy caregiver-child relationship	2 RCTs ^{87,88} ; 141	M	Consistent	Direct	Precise	Low; medium to large (h=0.64 to 1.34)

^aActive comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

Note: All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen's h = 0.20, 0.50, and 0.80.¹⁷⁶ We include an effect size range when more than two effect sizes are reported.

Abbreviations: M = medium; RCT = randomized controlled trial; SOE = strength of evidence.

Incredible Years Adaptation

One RCT (Table 22) tested a co-parenting adaptation of the Incredible Years (IY) program, modified for use with biological and foster parent pairs and their children, age 3 to 10 years, compared with usual care.⁸⁹ The number of sessions for standard IY varies by age of child; the number of sessions is 18 to 20 for parents of preschool-age children and 12 to 16 for parents of early school-age to preadolescent children. The included trial reduced the number of sessions to a lower intensity approach (12 sessions).

Table 22. Incredible years adaptation: Study characteristics

First Author et al., Year, Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Linares et al., 2006 ⁸⁹ ; United States	Children in foster care, ages 3 to 10 years, and their biological and foster caregivers	RCT T1: 12 weeks post-baseline T2: 12 weeks after intervention end	G1: IY Adaptation G2: Usual care	G1: 80 caregivers (40 biological/foster pairs), 40 children G2: 48 parents (24 biological/foster pairs), 24 children Overall N=128 caregivers; 64 children	Medium

Abbreviations: G = group; N = number; RCT = randomized controlled trial; T = time.

Key Points

- **Mental and behavioral health:** There were no significant differences in efficacy of the IY Adaptation with parents (biological and foster) on child internalizing or externalizing problems (insufficient SOE).⁸⁹
- **Healthy caregiver-child relationship:** Parents (biological and foster) who participated in the IY Adaptation reported a significant increase in the endorsement/use of positive parenting practices compared with usual care (low SOE of benefit).⁸⁹

Detailed Synthesis

Table 23 presents the results of the study by Linares et al. testing an adaptation of IY⁸⁹; additional study details are provided in the evidence tables (Appendix E). In this study, the authors examined changes in caregiver-reported discipline practices as well as caregiver and teacher report of child behavioral problems. The study found no significant differences for caregiver report or teacher report of child behavioral problems at postintervention or at 3-month followup. However, IY participants were significantly more likely to endorse positive discipline practices at both postintervention and follow-up (small to medium effect sizes), and a significant group difference emerged at followup in reporting of setting clear expectations for the child (medium effect size). The authors also reported that biological caregivers were significantly more likely to retain improvements in self-reported positive discipline practices through followup compared with foster parents. Regarding coparenting outcomes, the trial demonstrated a benefit for some but not all dimensions assessed at postintervention (flexibility and problem-solving but not mutual social support; small to medium effect sizes); however, these group differences faded by followup.

Table 23. Results: Incredible years adaptation versus usual care

First Author et al., Year	Comparison Groups	Mental and Behavioral Health	Healthy Caregiver-Child Relationship
Linares et al, 2006 ⁸⁹	G1: IY Adaptation G2: Usual care	<p>Caregiver perception of child behavioral problems* (Child Behavior Checklist -Externalizing score) No difference between groups at T1, T2, p=NS (NR)</p> <p>Caregiver perception of child behavioral and conduct problems* (Eyberg Child Behavior Inventory) No difference between groups at T1, T2, p=NS (NR)</p> <p>Teacher report of disruptive classroom behaviors* (Sutter-Eyberg Student Behavior Inventory-Revised) No difference between groups at T1, T2, p=NS (NR)</p>	<p>Parenting behavior: Greater reporting of positive discipline strategies (Parenting Practices Interview Subscale) T1: G1>G2, p<0.05, d=0.40 T2: G1>G2, p<0.01, d=0.59</p> <p>Appropriate discipline strategies (Parenting Practices Interview Subscale) T1, T2: No difference between groups, p=NS (NR)</p> <p>Greater reporting of setting clear expectations for child (Parenting Practices Interview Subscale) T1: No difference between groups, p=ns (NR) T2: G1>G2, p<0.05, d=0.54</p> <p>Reporting of harsh discipline (Parenting Practices Interview Subscale) T1, T2: No difference between groups, p=NS (NR)</p>

Table 23. Results: Incredible years adaptation versus usual care (continued)

First Author et al., Year	Comparison Groups	Mental and Behavioral Health	Healthy Caregiver-Child Relationship
			Collaborative coparenting behavior:* Greater reporting of flexibility (Family Functioning Style Subscale) T1: G1>G2, $p<0.05$, $d=0.4$ T2: No difference between groups, $p=NS$ (NR) Greater reporting of mutual social support (Family Functioning Style Subscale) T1, T2: No difference between groups, $p=NS$ (NR) Greater reporting of problem solving (Family Functioning Style Subscale) T1: G1>G2, $p<0.05$, $d=0.52$ T2: No difference between groups, $p=NS$ (NR) Total coparenting score (Family Functioning Style Subscale) T1: G1>G2, $p<0.05$, $d=0.48$ T2: No difference between groups, $p=NS$ (NR)

Note: Greater comparative benefit is denoted using a greater (“>”) sign. Cohen’s d effect size index of the difference between groups means: 0.20 = small; 0.50 = medium; 0.80 = large.¹⁷⁶

Abbreviations: G = group; IY = Incredible Years; NS = not sufficient; NR = not reported; T = time; *=ITT analysis

For the trial testing an adaptation of IY compared with usual care, we graded the SOE as insufficient for mental and behavioral health outcomes due to nonsignificant findings and graded the SOE as low for caregiver-child relationship outcomes due to the presence of a single study (Table 24).

Table 24. Detailed strength of evidence grading table: Incredible years adaptation

Intervention and Comparator	Outcome	Studies; subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of effect
IY Adaptation vs. Usual Care	Mental and behavioral health	1, ⁸⁹ 64	M	Unknown, single study	Direct	Imprecise	Insufficient
	Healthy caregiver-child relationship	1, ⁸⁹ 64	M	Unknown, single study	Indirect	Imprecise	Low; small to medium ($d=0.40$ or 0.59)

Note: All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as: Cohen’s $d = 0.20, 0.50$, and 0.80 .¹⁷⁶ When authors use Eta effect sizes we use the interpretation that the authors provide.¹⁷⁷ We include an effect size range when more than two effect sizes are reported.

Abbreviations: M = medium; RCT = randomized controlled trial; SOE = strength of evidence.

Keeping Foster and Kinship Parents Trained and Supported

We identified one large effectiveness trial eligible for inclusion evaluating the low-intensity intervention, Keeping Foster and Kinship Parents Trained and Supported (KEEP), compared with usual care.⁹¹ The study targeted foster or kin caregivers of high-risk foster children ages 5 to 12 years (Table 25).

Table 25. Keeping foster and kinship parents trained and supported: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Chamberlain 2008 ⁹¹ United States	Foster children ages 5 to 12 years. Placed >30 days	RCT 5 months	G1: KEEP G2: Usual care	G1: 359 G2: 341	Medium

Abbreviations: G = group; KEEP = Keeping Foster and Kinship Parents Trained and Supported; RCT = randomized controlled trial.

Key Points

- **Mental and behavioral health:** Participants in KEEP reported significantly greater improvement in child externalizing behavior compared with usual care (moderate SOE of benefit).⁹¹
- **Healthy caregiver-child relationship:** Participants in KEEP reported significantly increased use of positive discipline practices compared with usual care (moderate SOE of benefit).⁹¹

Detailed Synthesis

Table 26 presents the results of the KEEP RCT; additional study details are provided in the evidence tables (Appendix E). The authors examined parent daily report of child problem behaviors and use of positive reinforcement, assessed 5 months postbaseline. Proportion of positive reinforcement (R+) was calculated as a ratio of R+; discipline behaviors were aggregated from the parent report data and an intensive, 2-hour interview with the foster parent. Results controlled for baseline scores and indicated significant improvement in problem behaviors for the KEEP group relative to routine foster care, as well as an increase in positive reinforcement as a proportion of total foster parent discipline; the study reports small effect sizes for both outcomes. The intervention effect was greatest among foster parents who reported more than six child behavior problems at baseline.

Table 26. Results: Keeping foster and kinship parents trained and supported versus usual care

First Author et al., Year	Comparison Groups	Mental and Behavioral Health	Healthy Caregiver-Child Relationship
Chamberlain, 2008 ⁹¹	G1: KEEP G2: Usual care	Improvement in problem behaviors at endpoint (parent daily report) G1>G2, p=NR (sig), d=0.26	Increased proportion positive reinforcement at endpoint (parent daily report) G1>G2, p=NR (sig), d=0.29

Note: Greater comparative benefit is denoted using a greater (“>”) sign. Interpretation of the effect size as small, medium, or large is defined as: Cohen’s $d = 0.20, 0.50, \text{ and } 0.80$ ¹⁷⁶

Abbreviations: G = group; KEEP = Keeping Foster and Kinship Parents Trained and Supported; NR = not reported; sig = significant.

Although the body of evidence is limited to a single study for KEEP, we graded the SOE as moderate for both child mental and behavioral health outcomes and caregiver-child relationship outcomes due to the size of the study and because it was an effectiveness trial (Table 27).

Table 27. Detailed strength of evidence grading table: Keeping foster parents trained and supported

Intervention and Comparator	Outcome	Studies; subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of effect
KEEP vs. Usual Care	Mental and behavioral health	1 RCT ⁹¹ ; 700	M	Unknown, single study	Direct	Precise	Moderate; small (d=0.26)
	Healthy caregiver-child relationship	1 RCT ⁹¹ ; 700	M	Unknown, single study	Indirect	Precise	Moderate; small (d=0.29)

Note: All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as: Cohen's $d = 0.20, 0.50$, and 0.80 .¹⁷⁶

Abbreviations: M = medium; RCT = randomized controlled trial; SOE = strength of evidence.

Nurse Home Visitation Intervention

We identified one effectiveness trial (RCT), reported in one article,⁹³ comparing a high-intensity nurse home visitation intervention with usual care (Table 28). The intervention was loosely derived from Olds and colleagues' model.¹⁷⁸ The study targeted children 13 years and younger with a recent history of physical abuse or neglect and their mothers.

Table 28. Nurse home visitation intervention: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
MacMillan et al., 2005 ⁹³ Canada	Physically abused or neglected children ages 13 years and younger and their families	RCT T1: 1 year postbaseline T2: 2 years postbaseline T3: 3 years postbaseline	G1: Nurse home visitation G2: Usual care	G1: 89 G2: 74 Overall N=163	Low

Abbreviations: N = number; RCT = randomized controlled trial; T = time.

Key Points

- **Mental and behavioral health:** There were no significant differences in efficacy of the intervention on child internalizing or externalizing behavior (insufficient SOE).⁹³
- **Healthy caregiver-child relationship:** There were no significant differences in efficacy of the intervention parent attitudes, parenting practices associated with child abuse, family functioning, or the home environment (insufficient SOE).⁹³

Detailed Synthesis

Table 29 presents the results of the nurse home visitation trial;⁹³ additional study details are provided in the evidence tables (Appendix E). The authors examined child behavior problems, parental self-report of risk factors for child abuse, parental attitudes towards parenting, developmentally supportive home environment, and family functioning. No significant were found on any outcome across 3 assessment timepoints (up to 3 years postbaseline).

Table 29. Results: Nurse Home visitation intervention versus usual care

First Author et al., Year	Comparison Groups	Mental and Behavioral Health	Healthy Caregiver-Child Relationship
MacMillan et al., 2005 ⁹³	G1: Nurse home visitation G2: Usual care	Improvement in child behavioral problems^a (Revised Behavioral Problems Checklist) Subscales: <u>Attentional problems</u> No difference between G1 and G2, p=NS <u>Anxiety/withdrawal</u> No difference between G1 and G2, p=NS <u>Psychotic behavior</u> No difference between G1 and G2, p=NS <u>Conduct disorder symptoms</u> No difference between G1 and G2, p=NS <u>Socialized aggression</u> No difference between G1 and G2, p=NS <u>Excessive motor tension</u> No difference between G1 and G2, p=NS	Improvements in self-reported risk factors for child abuse^a (Child Abuse Potential Inventory) No difference between G1 and G2, p=NS Improvement in child rearing attitudes[*] (Adult Adolescent Parenting Inventory) No difference between G1 and G2, p=NS Improvements in the quality of the child's environment[*] (HOME) No difference between G1 and G2, p=NS Improvements in family functioning[*] (McMaster Family Functioning-General Functioning Scale) No difference between G1 and G2, p=NS

^a intention-to-treat (ITT) analysis

Abbreviations: G = group; HOME = Home Observation for Measure of the Environment; NS = not significant; SOE = strength of evidence.

We graded the SOE as insufficient for mental and behavioral health and caregiver-child relationship outcomes due to nonsignificant findings (Table 30).

Table 30. Detailed strength of evidence grading table: Nurse home visitation intervention

Intervention and Comparator	Outcome	Studies; subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of effect
Nurse home visitation vs. usual care	Mental health outcomes	1 RCT, ⁹³ 163	L	Unknown, Single Study	Direct	Imprecise	Insufficient
	Healthy child-caregiver-outcomes	1 RCT, ⁹³ 163	L	Unknown, Single Study	Direct	Imprecise	Insufficient

Abbreviations: M = medium; RCT = randomized controlled trial; SOE = strength of evidence.

Videotape Intervention

We identified one RCT (one article)¹⁰¹ comparing a low-intensity videotape intervention designed to improve caregiver supportive behavior towards a sexually abused child; the control group viewed a neutral videotape (Table 31). The study targeted mothers and their children, between the ages of 4 and 12.

Table 31. Videotape intervention: Study characteristics

First Author et al., Year	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Jinich and Litrownik, 1999 ¹⁰¹	Sexually abused children (ages 4-12) and their mothers	RCT 22-minute videotape; 1 week follow-up to complete questionnaires	G1: VI G2: CV	Mothers G1: 32 G2: 32 Overall N = 64 Children ages 8-12 G1: 15 G2: 15 Overall N=30	Medium

Abbreviations: CV=control videotape group, G=group, RCT=randomized clinical trial, VI=videotape intervention.

Key Points

- **Mental and behavioral health:** There were no significant differences in efficacy of the intervention on mental and behavioral health outcomes (insufficient SOE).¹⁰¹

Detailed Synthesis

Table 32 presents the results of a trial evaluating a videotape intervention;¹⁰¹ additional study details are provided in the evidence tables (Appendix E). The study was set in the waiting room of a clinic and conducted before and after the child's forensic evaluation to confirm the suspected sexual abuse. The authors examined several outcomes relevant to KQ 1; however, most measures were developed by the study authors and without established validity. Thus, we include here only outcomes from the one valid measure, a child self-report measure of the impact of the traumatic experience. There were no significant differences between groups regarding child-reported problems related to the sexual abuse (e.g., social support, self-blame, negative reactions to others, and empowerment).

Table 32. Results: Videotape Intervention versus control videotape

First Author et al., Year	Comparison Groups	Mental Health	Healthy Child-Caregiver Relationship
Jinich and Litrownik, 1999 ¹⁰¹	G1: VI G2: CV	Improvement in child self-blame (Children's Impact of Traumatic Events Scale-Revised) No difference between G1 and G2, p=NS Improvements in child negative reactions to others (Children's Impact of Traumatic Events Scale-Revised) No difference between G1 and G2, p=NS Improvements in child empowerment (Children's Impact of Traumatic Events Scale-Revised) No difference between G1 and G2, p=NS	Improvement in child perception of social support (Children's Impact of Traumatic Events Scale-Revised) No difference between G1 and G2, p=NS

Abbreviations: CV=control videotape group, G=group, NS=VI=videotape intervention.

We graded the SOE as insufficient due to nonsignificant findings (Table 33).

Table 33. Detailed strength of evidence grading table: Videotape intervention

Intervention and Comparator	Outcome	Studies; subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of Effect
Videotape Intervention vs. Inactive Control	Mental health outcomes	1 RCT ¹⁰¹ ; 30	M	Unknown	Direct	Imprecise	Insufficient

Abbreviations: M = medium; RCT = randomized controlled trial; SOE = strength of evidence.

Parenting Interventions, Summary of Strength of Evidence Grades

We summarize the SOE grade for all parenting interventions in Table 34.

Table 34. Parenting interventions: Summary strength of evidence for child well-being outcomes

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence; Magnitude of Effect
Attachment and Biobehavioral Catch-up	Active control ^a	Mental and behavioral health	2 ^{77,78,82,83} ; 213	Low; NR
		Healthy caregiver-child relationship	2 ^{79,81} ; 166	Low; NR
		Healthy development	1 ⁸⁵ ; 37	Low; NR
	Wait list	Mental and behavioral health	1 ⁸⁰ ; 58	Low; medium (partial eta squared=0.436 or 0.511)
		Healthy caregiver-child relationship	1 ⁸⁰ ; 58	Low; medium or large (partial eta squared=0.59 or 0.791)
Attachment-based Intervention	Usual care	Mental and behavioral health	1 ⁸⁶ ; 79	Insufficient
		Healthy caregiver-child relationship	1 ⁸⁶ ; 79	Low; small to medium (d=0.47, r=0.36 or 0.37)
Child-Parent Psychotherapy ^b	Active control ^a	Healthy caregiver-child relationship	2 ^{87,88} ; 159	Insufficient
	Usual care	Healthy caregiver-child relationship	2 ^{87,88} ; 141	Low; medium to large (h=0.64 to 1.34)
Incredible Years Adaptation	Usual care	Mental and behavioral health	1 ⁸⁹ ; 64	Insufficient
		Healthy caregiver-child relationship	1 ⁸⁹ ; 64	Low; small to medium (d=0.40 or 0.59)
Keeping Foster and Kinship Parents Trained and Supported	Usual care	Mental and behavioral health	1 ⁹¹ ; 700	Moderate; small (d=0.26)
		Healthy caregiver-child relationship	1 ⁹¹ ; 700	Moderate; small (d=0.29)
Nurse-Home Visitation Intervention	Usual care	Mental and behavioral health	1 ⁹³ ; 163	Insufficient
		Healthy caregiver-child relationship	1 ⁹³ ; 163	Insufficient
Videotape Intervention	Control videotape	Mental and behavioral health	1 ¹⁰¹ ; 30	Insufficient
		Healthy caregiver-child relationship	1 ¹⁰¹ ; 30	Insufficient

^a Active comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

^b Intervention is a variant of relationship-based dyadic psychotherapy as developed and manualized by Cicchetti and colleagues.^{87,88}

Note: Table is organized alphabetically by intervention name. All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant ($p < 0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as: Cohen's $d = 0.20, 0.50$, and 0.80 ; Cohen's $h = 0.20, 0.50$, and 0.80 ; and correlation coefficient $r = 0.10, 0.30$, and 0.50 .¹⁷⁶ When authors use eta or partial eta squared effect sizes we use the interpretation that the authors provide.^{80,177} We include an effect size range when more than two effect sizes are reported.

Abbreviations: G = group; NR = not reported.

Trauma-Focused Treatments

Description of Included Studies

Table 35 presents the 7 trials, reported in 7 articles, evaluating trauma-focused treatments included in KQ 1.

Table 35. Numbers of trials and articles investigating child well-being outcomes: Trauma-focused treatments

Intervention	Trials
Combined Parent-Child Cognitive Behavioral Therapy ¹⁰⁷	1
Eye Movement Desensitization and Reprocessing ¹¹²	1
Group Psychotherapy for Sexually Abused Girls ¹¹³	1
Group Treatment Program for Sexual Abuse ¹¹⁴	1
Trauma-Focused Cognitive Behavioral Therapy ^{108,115}	2
Trauma-Focused Cognitive Behavioral Therapy Group Adaptation ¹¹⁶	1
Total	7

Below we provide an overview of the key features in the body of evidence for parenting interventions.

- Six of the trials were RCTs^{107,108,112,113,115,116} and one was a nonrandomized controlled trial.¹¹⁴
- All studies were efficacy trials (i.e., none of the studies self-identified as an effectiveness trial or did not meet the criteria for an effectiveness trial).
- All interventions included a child component.
- One trial also targeted a caregiver who had physically abused their child.¹⁰⁷
- Four trials, all focused on children exposed to sexual abuse, also included components directed at the nonmaltreating caregiver.^{108,113,115,116}
- One trial targeted children in early adolescence.¹¹²
- One trial compared the experimental intervention with an inactive control group (e.g., wait list).¹¹⁴
- Six trials used active control groups.
 - Three trials employed active control comparators representative of conventional practices in the field.^{108,113,116}
 - Three trials employed active control comparators that were derived approaches.^{107,112,115}
- All seven trials reported mental and behavioral health outcomes.
- Three trials reported on caregiver-child relationship outcomes.^{107,108,116}
- No trials assessed developmental or school-based functioning outcomes.

Combined Parent-Child Cognitive Behavioral Therapy

We identified one RCT (one article)¹⁰⁷ comparing a medium-intensity group-based approach, Combined Parent-Child Cognitive Behavioral Therapy (CPC-CBT), with an active comparator described by the authors as similar to but more comprehensive than usual parenting services offered in the community (Table 36).¹⁰⁷ The study targeted physically abusive parents (defined as a substantiated allegation of child physical abuse in the past 4 months or who endorsed physical punishment on a standardized measure). To be eligible for the study, children (age 7 to

13) had to meet trauma symptom criteria of either endorsement of four post-traumatic stress disorder symptoms or elevated externalizing behavior scores on standardized measures.

Table 36. Combined parent-child cognitive behavioral therapy: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Runyon et al., 2010 ¹⁰⁷ United States	Children ages 7 to 13 years and physically abusive parent	RCT T1: intervention end; approximately 16-20 weeks postbaseline T2: 12 weeks after intervention end ^a	G1: CPC-CBT G2: Active control	G1: 40 children G2: 35 children Overall N=75	Medium

^a Results at T2 are not included due to high overall attrition.

Abbreviations: CPC-CBT = Combined Parent-Child Cognitive Behavioral Therapy; G = group; N = number; RCT = randomized controlled trial; SD = standard deviation; T = time.

Key Points

- **Mental and behavioral health:** Compared with an active control, participants in CPC-CBT had a significantly greater reduction in trauma symptoms; however, there was no significant difference in efficacy of the intervention on child internalizing or externalizing behavior problems (low SOE of benefit).¹⁰⁷
- **Healthy caregiver-child relationship:** Compared with an active control, parents in CPC-CBT reported significantly greater increases in positive parenting practices; however, the control group reported significantly lower use of corporal punishment compared with participants in CPC-CBT. Based on child report, there were no significant differences in efficacy of the intervention on positive parenting practices or use of corporal punishment (insufficient SOE).¹⁰⁷

Detailed Synthesis

Table 37 presents the results of the CPC-CBT trial;¹⁰⁷ additional study details are provided in the evidence tables (Appendix E). The authors examined child trauma symptoms and behavioral problems as well as child and parent reports of positive parenting skills and use of corporal punishment. Parents in both study arms reported significant reductions in child PTSD symptoms and internalizing problems, with no statistically significant difference between treatment groups at either followup. The difference between groups was also nonsignificant for externalizing behavior problems. At postintervention, parents who participated in CPC-CBT reported a significantly greater increase in positive parenting practices compared with the active control (medium effect size). However, the control group reported significantly lower use of corporal punishment compared with participants in CPC-CBT (medium effect size). The authors also reported results at 3-month follow-up but the attrition rates at this time point were beyond our threshold for inclusion. The authors also reported that two families had new substantiated abuse allegations at followup but did not indicate the condition in which the families participated.

Table 37. Results: Combined parent-child cognitive behavioral therapy versus active control

First Author et al., Year	Comparison Groups	Mental and Behavioral Health	Healthy Caregiver-Child Relationship
Runyon et al., 2010 ¹⁰⁷	G1: CPC-CBT G2: Active control	<p>Parent and child report of trauma symptoms (Schedule for Affective Disorders and Schizophrenia for School-Aged Children Present and Lifetime Version) G1⁺>G2⁺, p<.05, d=0.61</p> <p>Parent report of child internalizing behavior problems (Child Behavior Checklist - Internalizing) No difference between G1⁺ and G2⁺, p=NS (NR)</p> <p>Parent report of child externalizing behavior problems (Child Behavior Checklist - Externalizing) No difference between G1^{ns} and G2⁺, p=NS (NR)</p>	<p>Child report of positive parenting (Alabama Parenting Questionnaire-Child) No difference between G1^{ns} and G2^{ns}, p=NS (NR)</p> <p>Child report of reduction in parents' use of corporal punishment (Alabama Parenting Questionnaire-Child) No difference between G1⁺ and G2⁺, p=NS (NR)</p> <p>Parent report of positive parenting (Alabama Parenting Questionnaire-Parent) G1⁺>G2^{ns}, p<0.05, d=0.59</p> <p>Parent report of reduction in use of corporal punishment (Alabama Parenting Questionnaire-Parent) G1⁺<G2⁺, p<0.05, d=0.57</p>

Note: Greater comparative benefit is denoted using a greater (“>”) sign. Cohen’s *d* effect size index of the difference between groups means: 0.20 = small; 0.50 = medium; 0.80 = large.¹⁷⁶

Abbreviations: CPC-CBT = Combined Parent-Child Cognitive Behavioral Therapy; G = group; NR = not reported; NS = not significant; T = time.

We graded the SOE for mental and behavioral health outcomes as low, based on the significant finding for reduced trauma symptoms in a single study (Table 38). We graded the SOE for caregiver-child relationship outcomes as insufficient due to nonsignificant and conflicting findings.

Table 38. Detailed strength of evidence grading table: Combined parent-child cognitive behavioral therapy

Intervention and Comparator	Outcome	Studies; Subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of Effect
CPC-CBT vs. active control ^a	Mental and behavioral health	1 RCT ¹⁰⁷ ; 75	M	Unknown, single study	Direct	Precise	Low; medium (d=0.61)
	Healthy caregiver-child relationship	1 RCT ¹⁰⁷ ; 75	M	Unknown, single study	Indirect	Imprecise	Insufficient

^aActive comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

Note: All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as: Cohen’s *d* = 0.20, 0.50, and 0.80.¹⁷⁶

Abbreviations: CPC-CBT = Combined Parent-Child Cognitive Behavioral Therapy; M = medium; RCT = randomized controlled trial; SOE = strength of evidence.

Eye Movement Desensitization and Reprocessing

We identified one RCT (one article)¹¹² eligible for the review comparing Eye Movement Desensitization and Reprocessing (EMDR) (low-intensity intervention) with an active control group. The comparator was a substantively modified version of Trauma Focused-Cognitive Behavioral Therapy (TF-CBT) in that only the child component was retained from the original model (the standard version includes components that involve the caregiver; see Table 1 in the Introduction chapter for a description of standard TF-CBT). Additionally, it is not clear the extent to which other core components of TF-CBT were implemented with fidelity in this trial. The study targeted 12- to 13-year-old girls who reported sexual abuse victimization within the past 6 months (but not ongoing); a clinically significant level of trauma symptoms was required for participation in the study. The study was conducted in Iran (Table 39).

Table 39. Eye movement desensitization and reprocessing: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Jaberghaderi et al., 2004 ¹¹² Iran	Iranian girls ages 12 to 13 years	RCT 8 months	G1: EDMR G2: Active control	G1: 7 G2: 7 Overall N=14	Medium

Abbreviations: EDMR = Eye Movement Desensitization and Reprocessing; G = group; N = number; RCT = randomized controlled trial.

Key Points

- **Mental and behavioral health outcomes:** There was no significant difference in efficacy of the intervention on child trauma symptoms and child externalizing behaviors (insufficient SOE).¹¹²

Detailed Synthesis

Table 40 presents the results of the EMDR trial;¹¹² additional study details are provided in the evidence tables (Appendix E). EMDR is a low-intensity treatment, with an active control (N=7). The authors examined parent and child report of child trauma symptoms and teacher report of child behavior problems. Youth who participated in the EMDR condition reported a significant reduction in post-traumatic stress symptoms at treatment end whereas participants in the control group did not show significant declines in symptoms. However, the difference between groups did not reach statistical significance. Parent report of child trauma symptoms significantly declined from pre- to post-test for both the EMDR condition ($p<0.05$) and the control group. Again, the difference between groups was not significant. Similarly, teacher report of child problem behaviors declined for both the EMDR and control conditions; however, there was no difference between groups. The use of the substantively modified comparative intervention makes it difficult to interpret the findings; additionally, the setting (Iran) limits the generalizability of the findings.

Table 40. Results: Eye movement desensitization and reprocessing versus active control

First Author et al., Year	Comparison Groups	Mental and Behavioral Health
Jaberghaderi et al., 2004 ¹¹²	G1: EMDR G2: Active control	<p>Child report of trauma symptoms (Child Report of Post-traumatic Symptoms) No difference between G1⁺ and G2^{ns}, p=0.15</p> <p>Parent report of trauma symptoms (Parent Report of Post-traumatic Symptoms) No difference between G1⁺ and G2⁺, p=0.96</p> <p>Teacher report of problem behaviors (Rutter Teacher Scale) No difference between G1⁺ and G2⁺, p=0.42</p>

Abbreviations: EDMR = Eye Movement Desensitization and Reprocessing; G = group; NS = not significant; SOE = strength of evidence.

We graded the SOE as insufficient, due to the nonsignificant findings in a single study with few subjects (Table 41).

Table 41. Detailed strength of evidence grading table: Eye movement desensitization and reprocessing

Intervention and Comparator	Outcome	Studies; Subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of Effect
EMDR vs. Active Control	Mental and behavioral health	1 RCT ¹¹² ; 14	M	Unknown, Single Study	Direct	Imprecise	Insufficient

Abbreviations: EDMR = Eye Movement Desensitization and Reprocessing; M = medium; RCT = randomized controlled trial; SOE = strength of evidence.

Group Psychotherapy for Sexually Abused Girls

We identified one RCT (one article)¹¹³ evaluating a medium-intensity, psychoeducational and psychotherapeutic group treatment for sexually abused girls compared with an active control (Table 42). The control treatment was conventional psychoanalytic individual therapy (high intensity; up to 30 weekly 50-minute sessions). Both the experimental and control treatments shared generic and abuse-specific components including maintaining the therapeutic alliance, managing anxieties, and appropriately handling postabuse and current concerns. The two conditions also included a caregiver-directed component comprising social work support (delivered in either a group or individual mode aligned with that of the child-directed component). The study targeted girls between the ages of 6 and 14 years of age and was conducted in London. Nearly three-quarters of the sample had a DSM-IV diagnosis of PTSD (73%); the other main DSM-IV diagnoses in the sample were separation anxiety disorder (58%), major depressive disorder (57%), and general anxiety disorder (37%).

Table 42. Group psychotherapy for sexually abused girls: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Trowell et al., 2002 ¹¹³ England	Symptomatic sexually abused girls ages 6 to 14 years	RCT T1: 1 year after start of therapy T2: 2 years after start of therapy	G1: Group Psychotherapy for Sexually Abused Girls G2: Active control	G1: 36 G2: 35 Overall N=71	Medium

Abbreviations: G = group; N = number; RCT = randomized controlled trial; SOE = strength of evidence; T = time.

Key Points

- **Mental and behavioral health:** Girls who participated in the group therapy treatment had significantly worse outcomes in trauma symptoms compared with an active control. There was no significant difference in efficacy of the group psychotherapy treatment on trauma symptoms or functional impairment (low SOE of greater benefit for active control).¹¹³

Detailed Synthesis

Table 43 presents the results of the group psychotherapy treatment;¹¹³ additional study details are provided in the evidence tables (Appendix E). The authors examined trauma and other symptoms of emotional or behavioral disturbance. The authors set a criterion of medium to large effect sizes (≥ 0.5) for reporting findings. At the first followup, 1 year after baseline (start of therapy), children who participated in the control condition exhibited significantly greater improvements in PTSD symptomatology compared with those in group psychotherapy: re-experiencing of traumatic events (medium effect size) and persistent avoidance of stimuli dimensions (medium effect size). These group-difference findings were sustained at the second followup (2 years postentry into treatment) for re-experiencing symptoms (borderline large effect size) and persistent avoidance of stimuli (small effect size), again with greater improvements exhibited by children who participated in the control condition. No significant between-group differences were found for the PTSD dimension of “persistent symptoms of increased arousal” or for the Kiddie Global Assessment Scale impairment index.

Table 43. Results: Group psychotherapy for sexually abused girls versus active control

First Author et al., Year	Comparison Groups	Mental and Behavioral Health
Trowell et al., 2002 ¹¹³	G1: Group Psychotherapy for Sexually Abused Girls G2: Active control	<p>Re-experience of traumatic events scale (Orvaschel PTSD Scale) G1 < G2 T1: p=NR (sig), d=0.60 T2: p=NR (sig), d=0.79</p> <p>Persistent avoidance of stimuli (Orvaschel PTSD Scale) G1 < G2 T1: p=NR (sig), d=0.66 T2: p=NR (sig), d=0.36</p> <p>Persistent symptoms of increased arousal (Orvaschel PTSD Scale) No difference between G1 and G2 T1 and T2: p=NS (NR)</p> <p>Impairment index (Kiddie Global Assessment Scale) No difference between G1 and G2 T1 and T2: p=NS (NR)</p>

Note: Greater comparative benefit is denoted using a greater (“>”) sign. Cohen’s *d* effect size index of the difference between groups means: 0.20 = small; 0.50 = medium; 0.80 = large.

Abbreviations: G = group; NR = not reported; NS = not significant; PTSD = post-traumatic stress disorder; SOE = strength of evidence; T = time.

We graded the SOE as low for mental and behavioral health outcomes for the active control (conventional psychoanalytic therapy), based on the significant finding for reduced trauma symptoms in a single study (Table 44).

Table 44. Detailed strength of evidence grading table: Group psychotherapy for sexually abused girls

Intervention and Comparator	Outcome	Studies; Subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of Effect
Group Psychotherapy for Sexually Abused Girls vs. Active control ^a	Mental and behavioral health	1 RCT ¹¹³ ; 71	M	Unknown, Single Study	Direct	Precise	Low (G1<G2); small to medium (d=0.36 to 0.79)

^aActive comparator is an approach representative of a conventional practice in the field.

Note: For estimation of the magnitude of effect, we include only the statistically significant ($p < 0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as: Cohen’s *d* = 0.20, 0.50, and 0.80¹⁷⁶

Abbreviations: M = medium; RCT = randomized controlled trial; SOE = strength of evidence.

Group Treatment Program for Sexual Abuse

We identified one nonrandomized controlled trial (Table 45) comparing a high-intensity psychoeducational and psychotherapeutic group treatment for sexual abuse victims with a wait-list control group. The study targeted sexually abused girls between the ages of 9 and 12 years, referred from CPS or other sources, including self-referral. In describing the intervention, the

authors briefly list its components and also characterize it as “similar to hundreds of treatment programs provided to children who have been sexually abused.”

Table 45. Group treatment program for sexual abuse: Study characteristics

First Author et al., Year	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
McGain and McKinzey, 1995 ¹¹⁴	Sexually abused girls (ages 9-12)	Nonrandomized controlled trial 24 sessions over 6 months	G1: Group Treatment Program for Sexual Abuse G2: wait list	G1: 15 G2: 15 Overall N = 30	Medium

Abbreviation: G = group.

Key Points

- **Mental and behavioral health:** Compared with a wait-list control, girls who participated in a group treatment program had significantly greater improvements in behavioral problems (including conduct problems, socialized aggression, attention problems, motor excess, intensity) (low SOE of benefit).¹¹⁴

Detailed Synthesis

Table 46 presents the results of a nonrandomized controlled trial of a group treatment program for sexual abuse victims;¹¹⁴ additional study details are provided in the evidence tables (Appendix E). The authors examined participants’ emotional and behavioral adjustment following the abuse. Participants in the group treatment had significantly greater reductions in conduct problems. Comparing post-test means across study arms, the study found significant differences in improvement across numerous subscales of a behavioral measure. However, these findings must be interpreted with caution in light of the nonrandomized design and very small sample size.

Table 46. KQ 1 results: Group treatment for sexual abuse versus wait list control

First Author et al., Year	Comparison Groups	Mental and Behavioral Health
McGain and McKinzey, 1995	G1: Group Treatment Program for Sexual Abuse G2: wait list	<p>Improvements in symptoms of conduct disorder (Quay Revised Behavior Problems Checklist) G1>G2, p<0.0001</p> <p>Improvements in symptoms of socialized aggression (Quay Revised Behavior Problems Checklist) G1>G2, p<0.0001</p> <p>Decreases in attention problems/immaturity (Quay Revised Behavior Problems Checklist) G1>G2, p<0.0001</p> <p>Improvements in anxiety/withdrawal (Quay Revised Behavior Problems Checklist) G1>G2, p<0.0001</p> <p>Improvements in motor excess (Quay Revised Behavior Problems Checklist) G1>G2, p<0.0001</p> <p>Overall improvements in the intensity of behavior problems (Quay Revised Behavior Problems Checklist) G1>G2, p<0.0001</p> <p>Overall improvements in the number of behavior problems G1>G2, p=0.001</p>

Note: Greater comparative benefit is denoted using a greater (“>”) sign.

Abbreviation: G = group.

We graded the SOE as low due to the presence of a single study (Table 47).

Table 47. Detailed strength of evidence grading table: Group treatment program for sexual abuse

Intervention and Comparator	Outcome	Studies; Subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of Effect
Group Treatment Program for Sexual Abuse vs. Inactive Control	Mental and behavioral health	1 ¹¹⁴ ; 30	M	Unknown, single study	Direct	Precise	Low; NR

Note: All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis.

Abbreviations: G = group; M = medium; NR == not reported; SOE = strength of evidence.

Trauma-Focused Cognitive Behavioral Therapy

We identified three RCTs evaluating the efficacy of Trauma-Focused Cognitive Behavioral Therapy (TF-CBT), a low- to medium-intensity (12 to 16 weekly sessions) treatment (Table 48). Two trials compared TF-CBT with active controls developed by the study authors. The initial trial,¹¹⁵ conducted with children age 2 to 7 years, used a derived comparator designed to control for nonspecific aspects of the experimental intervention (focused on reducing isolation and hopelessness while improving emotion identification; no explicit focus on the sexual abuse). A second trial,¹⁰⁸ conducted with children age 8 to 14 years, used conventional child-centered

therapy focused on developing a trusting therapeutic alliance and allowed therapy goals to be directed by child and parent (2 sessions directed towards processing the sexual abuse if the clients did not spontaneously talk about the abuse). A third trial,¹¹⁶ conducted with children age 2 to 8 years, compared a group adaptation of TF-CBT with a conventional supportive parent group developed by the authors. The control treatment focused on topics individual group members selected with an emphasis on active listening, unconditional positive regard, and reflecting feelings. The authors describe the experimental and control treatments as being similar in content but differing in the methods used to deliver information and skills, with the former using an interactive behavioral therapy format and the latter using a didactic format.

Table 48. Trauma-focused cognitive behavioral therapy: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Cohen et al, 1996 ¹¹⁵ United States	Sexually abused preschoolers (ages 2.11 to 7.1 years; mean age=4.68)	RCT 12 to 16 weeks	G1: TF-CBT G2: Active control	G1: NR G2: NR Overall N=86	Medium
Cohen et al, 2004 ¹⁰⁸ United States	Sexually abused children (ages 8 to 14.11 years; mean age=10.76)	RCT 12 weeks	G1=TF-CBT G2=Active control	G1=114 G2=115 Overall N=229	Low
Deblinger et al, 2001 ¹¹⁶ United States	Sexually abused young children (ages 2 to 8 years; mean age 5.45)	RCT 11 weeks Followup: 3 months	G1=TF-CBT Group Adaptation G2= Active control	G1=22 G2=22 Overall N=44	Medium

Abbreviations: G = group; N = number; NR = not reported; RCT = randomized controlled trial; TF-CBT = Trauma-Focused Cognitive-Behavioral Therapy.

Key Points

- **Mental and behavioral health:**
 - Compared with active controls, participants in TF-CBT had significantly greater improvements in trauma symptoms; however, findings were inconsistent across the two trials for internalizing sexual behavior problems (low SOE of benefit).^{108,115}
 - There were no significant differences in efficacy of the TF-CBT Group Adaptation compared with an active control on trauma symptoms or behavioral problems, including sexual behavior (insufficient SOE).¹¹⁶
- **Healthy caregiver-child relationship:**
 - Compared with an active control, parents who participated in TF-CBT had significantly greater reductions in depression and increased use of positive parenting practices (low SOE of benefit).¹⁰⁸
 - Compared with an active control, mothers who participated in TF-CBT Group Adaptation had significantly greater declines in intrusive thoughts; however, there were no significant differences in efficacy of TF-CBT on mother's avoidant thoughts, trauma symptoms, or parenting practices (insufficient SOE).¹¹⁶

Detailed Synthesis

Table 49 presents the results of the standard TF-CBT trials;^{108,115} additional study details are provided in the evidence tables (Appendix E). In the initial trial,¹¹⁵ the authors examined young children's social competence, internalizing symptoms, and externalizing behavior including

sexual behavior. Participants in TF-CBT had significantly greater improvements on an overall measure of problem behavior, including a subscale on internalizing symptoms; however, there was no difference in efficacy of TF-CBT on the externalizing or social competence scales of the same measure. TF-CBT also resulted in improvements in sexual behavior as measured using a sexual behavior inventory. A second trial¹⁰⁸ with older children examined trauma symptoms, internalizing problems (using several measures), externalizing behaviors including sexual behavior problems, and social competence. This study also included parent depression and parenting practices outcomes. Participants in TF-CBT had significantly greater reductions in trauma symptoms compared with the control group: re-experiencing of the abuse (borderline medium effect size), decreases in avoidance of reminders of the abuse (medium-to-large effect size), and decreased hypervigilance (medium effect size). TF-CBT participants also experienced significant reductions in depression symptoms (medium effect size). However, there were no significant differences in efficacy of TF-CBT on internalizing problems including anxiety and no group differences in externalizing problems, sexual behavior problems, or social competence. A statistically significant between-group difference was found for the total score on the Child Behavior Checklist, although the low T-scores (< 40) call into question the clinical significance of the finding. Parents who participated in TF-CBT reported significant reductions in depressive symptoms (small effect size) and increased use of positive parenting practices (medium effect size) compared with the active control.

Table 49. Results: Trauma-focused cognitive behavioral therapy versus active control

First Author et al., Year	Comparison Groups	Mental and Behavioral Health	Healthy Caregiver-Child Relationship
Cohen et al, 1996 ¹¹⁵	G1: TF-CBT G2: Active control	<p>Improvements in social competence (Child Behavior Checklist Social Competence) No differences between G1^{ns} and G2^{ns}, p=NS, NR</p> <p>Improvements in behavior (Child Behavior Checklist Behavioral Profile-Total) G1⁺>G2^{ns}, p<0.01</p> <p>Improvements in internalizing symptoms (Child Behavior Checklist - Internalizing) G1⁺>G2^{ns}, p<0.002</p> <p>Improvements in externalizing symptoms (Child Behavior Checklist Externalizing) No differences between G1⁺ and G2^{ns}, p=NS, NR</p> <p>Improvements in sexual behaviors (Child Sexual Behavior Inventory) G1⁺>G2^{ns}, p<0.05</p>	NA

Table 49. Results: Trauma-focused cognitive behavioral therapy versus active control (continued)

First Author et al., Year	Comparison Groups	Mental and Behavioral Health	Healthy Caregiver-Child Relationship
Cohen et al, 2004 ¹⁰⁸	G1:TF-CBT G2: Active control	<p>Decrease in re-experiencing of traumatic event (Schedule for Affective Disorders and Schizophrenia for School-Aged Children Present and Lifetime Version – Re-experiencing) G1>G2, $p<0.01$, $d=0.49$</p> <p>Decrease in avoidance of reminders of traumatic event (Schedule for Affective Disorders and Schizophrenia for School-Aged Children Present and Lifetime Version- Avoidance) G1>G2, $p<0.001$, $d=0.70$</p> <p>Decrease in hypervigilance (Schedule for Affective Disorders and Schizophrenia for School-Aged Children Present and Lifetime Version- Hypervigilance) G1>G2, $p<0.01$, $d=0.40$</p> <p>Improvements in behavior (Child Behavior Checklist Total) G1>G2, $p<0.05$, $d=0.33$</p> <p>Improvements in social competence (Child Behavior Checklist Competence) No differences between G1 and G2, $p=NS$, NR</p> <p>Improvements in internalizing problems (Child Behavior Checklist Internalizing) No differences between G1 and G2, $p=NS$</p> <p>Improvements in externalizing (Child Behavior Checklist Externalizing) No differences between G1 and G2, $p=NS$</p> <p>Improvements in depression (Children's Depression Inventory) G1>G2, $p<0.05$, $d=0.30$</p> <p>Improvements in sexual behaviors (Children's Depression Inventory) No differences between G1 and G2, $p=NS$, NR</p> <p>Improvements in proneness to anxiety (State-Trait Anxiety Inventory for Children Trait) No differences between G1 and G2, $p=NS$, NR</p>	<p>Parent self-report of depression (Becks Depression Inventory) G1>G2, $p<0.05$, $d=0.38$</p> <p>Improved parenting practices (Parenting Practices Questionnaire) G1>G2, $p<0.001$, $d=0.57$</p>

Table 49. Results: Trauma-focused cognitive behavioral therapy versus active control (continued)

First Author et al., Year	Comparison Groups	Mental and Behavioral Health	Healthy Caregiver-Child Relationship
Cohen et al, 2004 ¹⁰⁸ (continued)		Improvements in fleeting anxiety (State-Trait Anxiety Inventory for Children State) No differences between G1 and G2, p=NS, NR	

Note: Greater comparative benefit is denoted using a greater (“>”) sign. Cohen’s *d* effect size index of the difference between groups means: 0.20 = small; 0.50 = medium; 0.80 = large.¹⁷⁶

Abbreviations: G = group; NA = not applicable; NR = not reported; NS = not significant; SOE = strength of evidence; TF-CBT = Trauma-Focused Cognitive-Behavioral Therapy.

Table 50 presents the results of the trial using the TF-CBT Group Adaptation;¹¹⁶ additional study details are provided in the evidence tables (Appendix E). The authors examined trauma symptoms, behavior problems, and sexual behavior problems outcomes as well as maternal emotional well-being outcomes (trauma symptoms and maternal distress) and parenting practices. The study found no significant differences between groups in children’s PTSD symptoms, behavior problems, or sexual behavior problems. The parents in the TF-CBT group reported significantly fewer intrusive thoughts about the abuse at the conclusion of the treatment but there were no significant differences in maternal PTSD symptoms, improved parenting practices, or maternal avoidant thoughts about the abuse across parent group conditions.

Table 50. Results: Trauma-focused cognitive behavioral therapy group adaptation versus active control

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes	Healthy Caregiver-Child Relationship Outcomes
Deblinger et al, 2001 ¹¹⁶	G1=TF-CBT Group Adaptation G2= Supportive Groups	Changes in PTSD symptoms No differences between G1 and G2 ^a , p=NS, NR Changes in behavior (Child Behavior Checklist) No differences between G1 and G2 ^a , p=NS, NR Changes in sexual behaviors (Child Sexual Behavior Inventory) No differences between G1 and G2 ^a , p=NS, NR	Maternal PTSD symptoms (Symptom Checklist-90-Revised) No differences between G1 and G2 ^a , p=NS, NR Improved parenting practices (Parenting Practices Questionnaire) No differences between G1 and G2 ^a , p=NS, NR Maternal distress-intrusive thoughts (Impact of Events Scale) G1>G2 ^a , p<0.05 Maternal distress-avoidant thoughts (Impact of Events Scale) No differences between G1 and G2 ^a , p=NS, NR

^aRepeated measures MANOVA, with pooled standard deviations across study groups, showed a significant improvement at $p < 0.001$.

Note: Greater comparative benefit is denoted using a greater (“>”) sign.

Abbreviations: G = group; NR = not reported; NS = not significant; PTSD = post-traumatic stress disorder; TF-CBT = Trauma-Focused Cognitive-Behavioral Therapy.

For the trials comparing standard TF-CBT with active controls, we graded the SOE as low for both mental and behavioral health and caregiver-child relationship outcomes (Table 51).

Although the sample size was relatively large for one of the trials, the SOE is limited by number of trials and the inconsistent findings. For the trial testing the TF-CBT Group Adaptation against an active control, we graded the SOE as insufficient for mental and behavioral health outcomes due to nonsignificant findings.

Table 51. Detailed strength of evidence grading table: Trauma-focused cognitive behavioral therapy

Intervention and Comparator	Outcome	Studies; subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of effect
TF-CBT vs. Active Control ^a	Mental and behavioral health	2 RCTs ^{108,115} ; 315	L/M	Consistent	Direct	Precise	Low; small to medium (d=0.30 to 0.70)
	Healthy caregiver-child relationship	1 RCT ¹⁰⁸ ; 229	L/	Unknown, single study	Indirect	Precise	Low; small to medium (d=0.38 or 0.57)
TF-CBT Group Adaptation vs. Active Control ^b	Mental and behavioral health	1 RCT ¹¹⁶ ; 44	M	Unknown, single study	Direct	Imprecise	Insufficient
	Healthy caregiver-child relationship	1 RCT ¹¹⁶ ; 44	M	Unknown, single study	Indirect	Imprecise	Insufficient

^a One comparator is a conventional approach, the other a derived approach.

^b Active comparator is an approach representative of a conventional practice in the field.

Note: All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as: Cohen's d = 0.20, 0.50, and 0.80.¹⁷⁶

Abbreviations: L = low; M = medium; RCT = randomized controlled trial; SOE = strength of evidence; TF-CBT = Trauma-Focused Cognitive-Behavioral Therapy.

Trauma-Focused Treatments, Summary of Strength of Evidence Grades

We summarize the SOE grade for all trauma-focused treatments in Table 52.

Table 52. Trauma-focused treatments: Summary strength of evidence for child well-being outcomes^a

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence Magnitude of Effect
Combined Parent-Child Cognitive Behavioral Therapy	Active Control ^a	Mental and behavioral health	1 ¹⁰⁷ , 75	Low; medium (d=0.61)
		Healthy caregiver-child relationship	1 ¹⁰⁷ , 75	Insufficient
Eye Movement Desensitization and Reprocessing	Active Control ^a	Mental and behavioral health	1 ¹¹² , 14	Insufficient
Group Psychotherapy for Sexually Abused Girls	Active control ^b	Mental and behavioral health	1 ¹¹³ , 71	Low (G1<G2); small to medium (d=0.36 to 0.79)
Group Treatment Program for Sexual Abuse	Inactive control	Mental and behavioral health	1 ¹¹⁴ , 30	Low; NR
Trauma-Focused Cognitive Behavioral Therapy	Active Control ^c	Mental and behavioral health	2 ^{108,115} , 315	Low; small to medium (d=0.30 to 0.70)
		Healthy caregiver-child relationship	1 ¹⁰⁸ , 229	Low; small to medium (d=0.38 or 0.57)
Trauma-Focused Cognitive Behavioral Therapy Group Adaptation	Active control ^b	Mental and behavioral Health	1 ¹¹⁶ , 44	Insufficient
		Healthy caregiver-child relationship	1 ¹¹⁶ , 44	Insufficient

^aActive comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

^bActive comparator is an approach representative of a conventional practice in the field.

^cOne comparator is a conventional approach, the other a derived approach.

Note: Table is organized alphabetically by intervention name. All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen's *d* = 0.20, 0.50, and 0.80.¹⁷⁶ We include an effect size range when more than two effect sizes are reported. Abbreviations: G = group; N = number; NR = not reported.

Enhanced Foster Care Interventions

Description of Included Studies

Table 53 presents the 4 trials, reported in 21 articles, evaluating enhanced foster care interventions included in KQ 1.

Table 53. Numbers of trials and articles investigating child well-being outcomes: Enhanced foster care interventions

Intervention	Trials
Bucharest Early Intervention Project (BEIP) ¹¹⁷⁻¹²⁹	1 ^a
Fostering Healthy Futures ¹³¹	1
Middle School Success ^{136,137}	1 ^b
Multidimensional Treatment Foster Care – Preschoolers (MTFC-P) ^{138,139,141,142,179}	1 ^c
Total	4

^aReported in 13 articles.

^bReported in 2 articles.

^cReported in 5 articles.

Below we provide an overview of the key features in the body of evidence for enhanced foster care interventions.

- All four trials were RCTs.^{117-124,126-129,131,136-139,141,142,179}
- All studies were efficacy trials (i.e., none of the studies self-identified as an effectiveness trial or did not meet the criteria for an effectiveness trial).
- Two of the experimental interventions included caregiver components. Both targeted children in early childhood.^{117-124,126-129,139,141,142,179}
- One trial assessed an intervention that targeted the child only.¹³¹
- Three trials compared the experimental intervention with usual care.^{117-124,126-129,139,141,142,179}
- One trial compared the experimental intervention with an inactive control group (i.e., assessment only).¹³¹
- All four trials reported on mental and behavioral health outcomes.
- Two trials also reported on healthy caregiver-child relationship and development outcomes.^{117-124,126-129,139,141,142,179}
- None of the included trials assessed school-based functioning outcomes.

One trial was completed outside of the United States. It was in Bucharest, Romania, and targeted children in institutional care.^{117-124,126-129}

Bucharest Early Intervention Project

We identified one RCT (13 articles)¹¹⁷⁻¹²⁹ evaluating a high-intensity model of enhanced supports to foster parents adopting infants and toddlers from institutional care in Bucharest, Romania (Table 54). The trial, known as the Bucharest Early Intervention Project (BEIP), is a landmark research study examining the efficacy of enhanced foster care with children who have experienced severe social deprivation (Table 54). The intervention model is based on a similar approach developed by one of the study authors and implemented in the United States.¹³⁰ The sample comprised children residing in one of six institutions; children with medical problems, such as genetic syndromes, observable characteristics of fetal alcohol syndrome, and microcephaly, were ineligible for the study. The primary inclusion criterion was for children to have entered their resident institution prior to 31 months of age.

Table 54. Bucharest early intervention project: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration ^a	Comparison Groups	Baseline N	Risk of Bias
Bos et al., 2009, ¹¹⁷ 2010; ¹¹⁸ Fox et al., 2011; ¹¹⁹ Ghera et al., 2009; ¹²⁰ Johnson et al., 2010; ¹²¹ Marshall et al., 2008; ¹²² McDermott et al., 2012; ¹²³ McLaughlin et al., 2011, ¹²⁴ 2012; ¹²⁵ Nelson et al., 2007; ¹²⁶ Smyke et al., 2010; ¹²⁷ Windsor et al., 2011; ¹²⁸ Zeanah et al., 2009 ¹²⁹ Romania	Institutionalized children (Mean age foster care=20.9, SD=7.1, Mean age institutional care=20.8, SD=7.17. Range 5-31 months)	RCT T1: 30 months (child age) T2: 42 months (child age) T3: 54 months (child age) T4: 96 months (8 years) ^a	G1: Foster care G2: Institutional care	G1: 68 ^b G2: 68 ^b	Medium

^aGhera et al., 2009, Johnson et al., 2010, Marshall et al., 2008, Smyke, 2010, and Windsor et al., 2011, assess outcomes at 30 and 42 months; Bos et al., 2009, at 30, 42, and 54 months; Zeanah et al., 2009, at 54 months; McLaughlin et al., 2011, at 30, 42, and 96 months; Fox et al., 2011, and McDermott et al., 2012, at 96 months.

^b Marshall et al, 2008 G1: 56, G2: 41

Abbreviations: G = group; RCT = randomized controlled trial; SD = standard deviation; T = time.

Key Points

- **Mental and behavioral health:** Compared with children who remained in institutional care, children in the BEIP intervention had significant improvements in attention and positive affect and reductions in internalizing and anxiety symptoms, stereotypies associated with severe deprivation and social isolation, and depression among females; there was no difference in efficacy of the BEIP intervention on externalizing disorders, ADHD, oppositional defiant or conduct disorders, depression among males, or comorbidity (low SOE of benefit).^{118,120,123,125,129}
- **Healthy caregiver-child relationship:** Compared with children who remained in institutionalized care, children in the BEIP intervention were significantly more likely to exhibit secure and organized attachment behavior (low SOE of benefit).^{121,125,127}
- **Healthy development:** Compared with children who remained in institutional care, children in the BEIP intervention had significantly higher levels of cognitive functioning and receptive/expressive language, improvements in executive functioning (working memory strategy, accuracy, faster reaction time), and improved physical growth (weight and height) (low SOE of benefit).^{117,119,121,122,124,126,128}

Detailed Synthesis

Table 55 presents the results of the BEIP trial;¹¹⁷⁻¹²⁹ additional study details are provided in the evidence tables (Appendix E). Mental and behavioral health outcomes were evaluated in five articles: one addressed psychiatric symptoms or disorders,¹²⁹ another behavior stereotypies,¹¹⁸ and two assessed aspects of attention and executive functioning;^{120,123} two papers report outcomes stratified by sex.^{125,129}

Table 55. Results: Bucharest early intervention project versus institutional care

First Author et al., Year	Comparison Groups	Mental and Behavioral Health	Healthy Caregiver-Child Relationship	Healthy Development
Ghera et al., 2009 ¹²⁰	G1:Foster care G2: Institutional care group	Attention^a (Lab-TAB) T1: No difference between groups G1 and G2, $p>0.05$ T2: $G1^+>G2$, $p=0.01$ Positive Affect^a T1: $G1^+>G2$, $p<0.001$ T2: $G1^+>G2$, $p<0.001$ Negative Affect^a T1, T2: No difference between groups G1 and G2, $p>0.05$	NA	NA
Zeanah et al., 2009 ¹²⁹	G1:Foster care G2: Institutional care	Psychiatric Disorder^a (Preschool Age Psychiatric Assessment) <u>Any Disorder</u> $G1>G2$, $p=0.10$, trend <u>Any Externalizing Disorder</u> No difference between G1 and G2, $p=0.69$ <u>Any Internalizing Disorder</u> $G1>G2$, $p=0.01$, OR 2.8 ^b (95% CI, 1.2 to 6.4) <u>ADHD</u> No difference between G1 and G2, $p=0.57$ <u>Opp. Defiant or Conduct D/O</u> No difference between G1 and G2, $p=0.57$ <u>Depression</u> No difference between G1 and G2, $p=0.50$ <u>Any Anxiety</u> $G1>G2$, $p=.01$, OR 2.9 ^b (95% CI, 1.2 to 6.6) <u>Comorbid D/O≥ 2</u> No difference between G1 and G2, $p=0.53$	NA	NA

Table 55. Results: Bucharest early intervention project versus institutional care (continued)

First Author et al., Year	Comparison Groups	Mental and Behavioral Health	Healthy Caregiver-Child Relationship	Healthy Development
McLaughlin 2012 ¹²⁵	G1:Foster care G2: Institutional care	<p>Psychiatric Disorder^a (Preschool Age Psychiatric Assessment)</p> <p><u>Any Internalizing Disorder among Females</u> G1> G2, p=0.006, OR 0.17</p> <p><u>Any Internalizing Symptoms among Females</u> G1> G2, p=0.004</p> <p><u>Depression among Females</u> G1> G2, p=0.009</p> <p><u>Anxiety among Females</u> G1> G2, p=0.009</p> <p><u>Any Externalizing Disorder among Females</u> No difference between G1 and G2, p=NR</p> <p><u>Any Externalizing Symptoms among Females</u> No difference between G1 and G2, p=NR</p> <p><u>Any Internalizing Disorder among Males</u> No difference between G1 and G2, p=0.150</p> <p><u>Any Internalizing Symptoms among Males</u> No difference between G1 and G2, p=0.372</p> <p><u>Depression among Males</u> No difference between G1 and G2, p=0.879</p> <p><u>Anxiety among males</u> No difference between G1 and G2, p=0.190</p>		

Table 55. Results: Bucharest early intervention project versus institutional care (continued)

First Author et al., Year	Comparison Groups	Mental and Behavioral Health	Healthy Caregiver-Child Relationship	Healthy Development
McLaughlin 2012 ¹²⁵ (continued)		<u>Any Externalizing Disorder among Males</u> No difference between G1 and G2, p=NR <u>Any Externalizing Symptoms among Males</u> No difference between G1 and G2, p=NR		
Bos et al., 2010 ¹¹⁸	G1: Foster care G2: Institutional care	Presence of Stereotypies (Preschool Age Psychiatric Assessment) T1: G1>G2, p=0.003 T2: G1>G2, p=0.001 T3: G1>G2, p=0.04	NA	NA
Smyke et al., 2010 ¹²⁷	G1: Foster care G2: Institutional care	NA	Attachment at 42 months* (strange situation) <u>Distribution of Attachment Types</u> G1>G2, p<0.001 <u>Organized v. Atypical</u> G1>G2, p<0.01 <u>Organized v. Atypical among G1</u> Girls>Boys, p<0.05 <u>Secure v. Insecure</u> G1>G2, p<0.001 <u>Secure v. Insecure among G1</u> Girls>Boys, p=0.055 <u>Mean Attachment Security Rating</u> (Observation, score 0 to 9) G1>G2, p<0.001	

Table 55. Results: Bucharest early intervention project versus institutional care (continued)

First Author et al., Year	Comparison Groups	Mental and Behavioral Health	Healthy Caregiver-Child Relationship	Healthy Development
McLaughlin 2012 ¹²⁵	G1:Foster care G2: Institutional care	NA	<p>Attachment at 42 months^a (strange situation)</p> <p><u>Secure v. Insecure among Females</u> T2 G1>G2, $p<0.001$, OR=12.5</p> <p><u>Change from Insecure to secure among Females</u> T2 G1>G2, $p=0.029$, OR= 6.6</p> <p><u>Secure v. Insecure among males</u> T2 No difference between G1 and G2, $p=.205$, OR= 1.1</p> <p><u>Change from Insecure to secure among males</u> T2 No difference between G1 and G2, $p=.250$, OR= 2.2</p>	
Nelson et al., 2007 ¹²⁶	G1:Foster care G2: Institutional care	NA	NA	<p>Developmental/Intellectual Quotient^a (Bayley Scales of Infant Development, Wechsler Preschool and Primary Scale of Intelligence) T1: G1>G2, $p=0.001$, ES=0.62 T2: G1>G2, $p=0.015$, ES=0.47</p>
Marshall et al., 2008 ¹²²	G1:Foster care G2: Institutional care	NA	NA	<p>EEG signal power and coherence^a EEG Power (Absolute) No difference between groups G1 and G2, $p=NR$, NS</p> <p>EEG Coherence No difference between groups G1 and G2, $p=NR$, NS</p>

Table 55. Results: Bucharest Early Intervention Project versus institutional care (continued)

First Author et al., Year	Comparison Groups	Mental and Behavioral Health	Healthy Caregiver-Child Relationship	Healthy Development
Bos et al., 2009 ¹¹⁷	G1:Foster care G2: Institutional care group	NA	NA	<p>Memory^a (CANTAB) No difference between groups G1 and G2, $p>0.05$</p> <p>Executive Functioning* (CANTAB):</p> <p>Stocking of Cambridge subtest: No difference between groups G1 and G2, $p>0.05$</p> <p>Spatial working memory subtest, total errors: No difference between groups G1 and G2, $p>0.05$</p> <p>Spatial working memory subtest, strategy: $G1^+>G2$, $p=0.008$</p>
Fox et al., 2011 ¹¹⁹	G1:Foster care G2: Institutional care group	NA	NA	<p>Intellectual Quotient* (Wechsler Intelligence Scale for Children, WISC-IV) Verbal Comprehension subtest: $G1^+>G2$, $p=0.036$</p> <p>Perceptual Reasoning subtest: No difference between groups G1 and G2, $p>0.05$</p> <p>Working Memory subtest: No difference between groups G1 and G2, $p>0.05$</p> <p>Processing Speed subtest No difference between groups G1 and G2, $p>0.05$</p> <p>Full IQ: $G1^+>G2$, trend $p=0.07$</p>

Table 55. Results: Bucharest Early Intervention Project versus institutional care (continued)

First Author et al., Year	Comparison Groups	Mental and Behavioral Health	Healthy Caregiver-Child Relationship	Healthy Development
Johnson et al., 2010 ¹²¹	G1:Foster care G2: Institutional care group	NA	Caregiving Quality (Observational Record of the Caregiving Environment-ORCE) T1 G1>G2, p<0.05 T2 No difference between groups G1 and G2, p>0.05 T1/T2 mean G1>G2, p<0.05	Auxology^a (physical maturation) Height: Mean growth Baseline /T1/T2 G1 ^a >G2, p <0.001 Growth change from Baseline/T1/T2 G1 ^a >G2, p <0.001 Weight Mean growth Baseline /T1/T2 G1 ^a >G2, p <0.001 Growth change from Baseline/T1/T2 G1 ^a >G2, p =0.05 Occipital-frontal circumference (Head grow): Growth change from Baseline/T1/T2 No difference between groups G1 and G2, p>0.05 Developmental/Intellectual Quotient^a (Bayley Scales of Infant Development, Wechsler Preschool and Primary Scale of Intelligence) T2 (DQ)G1 ^a >G2, p <0.05, T3 (IQ) G1 ^a >G2, p <0.05
McDermott., 2012 ¹²³	G1:Foster care G2: Institutional care group	NA	NA	Executive Functioning (inhibitory control, Go/No Go task): Accuracy: G1>G2, p <0.05 Faster Reaction time G1>G2, p <0.05 Differential reactivity (larger error related negativity difference score between correct and error trials) G1>G2, p=0.01
McLaughlin 2011 ¹²⁴	G1:Foster care G2: Institutional care	NA	NA	EEG Frontal Asymmetry No difference between groups G1 and G2, p=.663 EEG Parietal Asymmetry No difference between groups G1 and G2, p=.980

Table 55. Results: Bucharest Early Intervention Project versus institutional care (continued)

First Author et al., Year	Comparison Groups	Mental and Behavioral Health	Healthy Caregiver-Child Relationship	Healthy Development
Windsor et al., 2011 ¹²⁸	G1:Foster care G2: Institutional care group	NA	NA	<p>Expressive and Receptive Language^a (Receptive-Expressive Emergent Language Scale-REEL; Reynell Developmental Language Scales-III-RDLS)</p> <p>REEL-R (Receptive): T1 G1>G2, p=NR ES=0.53 (d) REEL-E (Expressive): T1 No difference between groups G1 and G2, p=NR</p> <p>RDLS-Expressive: T2 G1>G2, p=NR ES=0.50 (d) RDLS-Receptive: T2 G1>G2, p=NR ES=0.63 (d)</p>

^a = intention-to-treat (ITT) analysis

^b Odds ratio indicator of probability: no association is represented by 1, the greater the departure from 1 the stronger the relationship.

Abbreviations: ADGD = attention deficit hyperactivity disorder; G = group; Lab-TAB = Laboratory Temperament Assessment Battery; NA = not applicable; NR = not reported; OR = odds ratio; SOE = strength of evidence; T = time.

An article by Zeanah and colleagues¹²⁹ reported psychiatric disorder outcomes using a caregiver report measure that queried the presence, frequency, duration, and age at onset of symptoms corresponding to those in the American Psychiatric Association *Diagnostic and Statistical Manual*.¹⁸⁰ Scoring algorithms correspond to DSM diagnoses and to composite, categorical diagnoses, such as internalizing and externalizing disorders. Although externalizing disorders did not occur at significantly different rates, internalizing disorders were more common in institutional care group children and these children were also more likely to meet criteria for an anxiety disorder. No significant group differences were observed for attention deficit hyperactivity disorder, disruptive disorders, depressive disorder, or diagnostic comorbidity. Differences in internalizing disorders by gender were further explored by McLaughlin 2012, finding that among girls, those placed in foster care were less likely than the institutional group to have internalizing symptoms, internalizing disorders, anxiety, and depression. No differences were found by intervention group among males in internalizing. The foster care intervention had no effect on externalizing symptoms or on externalizing disorders in either girls or boys. In a paper examining psychiatric problems,¹¹⁸ Bos et al. reported reductions in stereotypic behaviors often observed in contexts of deprivation and institutionalization, with improvements favoring children in BEIP at all time points.

Three articles^{121,125,127} examined group differences in children's attachment behavior and offered relatively consistent support for the ability to alter attachment through BEIP. Attachment was assessed using a structured procedure, known as the "Strange Situation," in which the child experiences separations from and reunions with the parent that represent laboratory analogues of normative parent-child separations.¹⁸¹ At 42 months, children in BEIP improved significantly in the security and organization attachment relative to their institutionalized peers, more of whose attachment styles remained insecure and disorganized. Among children placed in foster care,

girls were more likely to have an organized attachment (compared with atypical attachment) classification than boys, and more likely to have secure attachment (compared with not secure) than boys. Analysis by age at placement in foster care showed that using multiple cut points for age (placement points between 18 and 28 months of age), children placed earlier when compared with those placed later for all age cutoffs were significantly more likely to have an organized attachment. For secure versus insecure attachment, children placed before 24 months of age were more likely to have secure attachment than those placed in foster care after 24 months. Time in foster care was also significant, with children being placed for longer time in foster care more likely to have an organized attachment than those placed for a shorter time. Differences in attachment by gender were further explored by McLaughlin and colleagues, finding that among females, those placed in foster care were more likely than the institutional group to have secure attachment and change from insecure/incompletely formed to secure attachment.¹²⁵ No differences were found by intervention group among males. Johnson and colleagues compared the quality of caregiving across study conditions. At 30 months and a combined 30/42 months, caregiving quality in BEIP outperformed the institutional care group.¹²¹ Higher caregiving quality was significantly associated with improvements in child height and weight.

Seven articles investigated the efficacy of BEIP in promoting children's cognitive functioning and development.^{117,119,121,122,124,126,128} Nelson¹²⁶ and Johnson¹²¹ compared children's mental development and intellectual ability across study conditions. At 42 and 54 months, children in BEIP outperformed the institutional care group (medium effect sizes). Intellectual ability was also compared across study conditions when children were 8 years old.¹¹⁹ Children in BEIP outperformed the institutional care group in the verbal subscale. One article compared expressive and receptive language.¹²⁸ At 30 months children in foster care outperformed the institutional group in receptive language, and by 42 months they outperformed the institutional group in receptive and expressive language. Placement age was significantly associated with both expressive and receptive language. Children placed by 15 months of age had higher receptive and expressive scores at 30 months than children placed later and outperformed the institutional care group, moreover, the expressive scores of children placed before 15 months were equivalent to never-institutionalized children. By 42 months, children placed before 24 months of age had longer utterances than children placed after 24 months and outperformed the institutional care group.

The sequelae of maltreatment and adversity can include impairments in critical aspects of executive functioning. These include attention and impulsivity, task accuracy and efficiency, and higher order cognitive functions, presumably related to interference of stress symptomatology. In an article by Ghera and colleagues,¹²⁰ the authors examined children's attention and affect. At 30 months, attention levels in the two groups did not differ significantly but by 42 months children in the BEIP condition had significantly higher attention levels than the children who remained in institutionalized care. Additionally, at both 30 and 42 months, children participating in BEIP displayed more positive affect; however, there was no significant difference between study arms in negative affect at any time point. Two articles^{117,123} analyzed executive functioning at age 8. Children in foster care outperformed the institutional care group in strategy abilities,¹¹⁷ accuracy,¹²³ faster reaction time,¹²³ and differential reactivity (better error related negativity difference score between correct and error trials of inhibitory control task). Neither group differed in their ability to inhibit responses.¹²³

Another article¹²² investigated cognitive functioning at the neurophysiological level comparing electroencephalogram (EEG) band power and coherence (as indices of neurological

maturation and cortical functioning) across the study conditions. EEG band power reflects the rhythmicity of the EEG signal across different frequencies. Coherence signifies the degree of synchronization between measurements from two different cortical areas; decreased coherence is thought to reflect greater brain complexity and differentiation. At 42 months, there were no significant differences between study conditions for band power or coherence. Additional analyses examined the interactions between EEG band power and coherence with age of foster placement. Differences in coherence were found for children placed in foster care earlier than 24 months but not for those placed later. EEG was also reported in relation to differential hemispheric activation.¹²⁴ Frontal EEG asymmetry (FEA) with right greater than left activation is associated with internalizing psychopathology. Although there were no significant differences in frontal and parietal FEA between children placed in foster care and the institutional care group, FEA among children placed before 24 months of age showed a significantly more favorable growth trajectory of FEA than children placed after 24 months. In the area of physical growth, Johnson¹²¹ compared children's height and weight across study conditions. Children in BEIP outperformed the institutional care group in mean growth and change in growth for height and weight from baseline to 42 months.

Although this study was rated a low risk of bias and provided precise outcome estimates, we graded the SOE as low for the mental and behavioral health, caregiver-child relationship, and developmental outcomes due to the presence of a single study (Table 56).

Table 56. Detailed strength of evidence grading table: Bucharest early intervention project

Intervention and Comparator	Outcome	Studies; subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of effect
BEIP vs. Institutional Care (usual care)	Mental and behavioral health	1 RCT ^{118,120,123,125,129,136}	M	Unknown, single study	Direct	Precise	Low Odds Ratio 2.8 [95% CI 1.2 to 6.4]
	Healthy caregiver-child relationship	1 RCT ^{121,125,127,136}	M	Unknown, single study	Direct	Precise	Low; NR
	Healthy development	1 RCT ^{117,119,121,122,124,126,128,136}	M	Unknown, single study	Direct	Precise	Low; Effect Size=0.47 or 0.62

Abbreviations: BEIP = Bucharest Early Intervention Project; CI = confidence interval; M = medium; NR = not reported; RCT = randomized controlled trial; SOE = strength of evidence.

Fostering Healthy Futures

We identified one RCT (one article, Table 57)¹³¹ evaluating outcomes relevant to KQ 1 for the intervention Fostering Healthy Futures (FHF). The study compares FHF, a high-intensity intervention, with an inactive control group (assessment-only condition). The study targeted maltreated children placed in out-of-home care (age 9 to 11).

Table 57. Fostering healthy futures: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Taussig and Culhane, 2010 ¹³¹ United States	Children in foster care (ages 9 to 11 years)	RCT (approximately 9 months in duration) Post-intervention: 11 to 13 months postbaseline Followup: 6-month post-intervention end	G1: Fostering Healthy Futures G2: Inactive control	G1: 79 G2: 77 Overall N=156	Low

Abbreviations: G = group; N = number; RCT = randomized controlled trial.

Key Points

- **Mental and behavioral health:** Compared with an inactive control, participants in FHF reported significantly greater reductions in trauma symptoms, dissociative symptoms, and quality of life (low SOE of benefit).¹³¹

Detailed Synthesis

Table 58 presents the results of the FHF trial reporting outcomes relevant to KQ 1;¹²⁹ additional study details are provided in the evidence tables (Appendix E). The authors examined children's trauma symptoms, coping skills, self-perceptions, and life satisfaction. Immediately following the intervention, participants in FHF reported significantly higher quality of life scores than youth in the control group (small effect size); no other significant differences emerged at postintervention. At followup, participants in FHF showed significantly greater improvements than youth in the control group on a composite mental health index representing child, teacher, and caregiver report of trauma symptoms and internalizing problems (medium effect size). Also at followup, participants in FHF reported significantly greater improvement in dissociative symptoms compared with youth in the control group (small effect sizes for both outcomes).

Table 58. Results: Fostering healthy futures versus inactive control

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes
Taussig and Culhane, 2010 ^{a,131}	G1: Fostering Healthy Futures G2: Inactive Control	<p>Primary Outcomes</p> <p>Multi-informant mental health index^a (composite of Trauma Symptoms Checklist and Internalizing Scales of Child Behavior Checklist and Teacher Report Form) T1: No difference between G1 and G2, $p=0.66$ T2: $G1>G2$, $p=0.003$; mean difference, -0.51 (95% CI, -0.84 to -0.19); $d=-0.51$</p> <p>Improvements in trauma symptoms^a (Trauma Symptoms Checklist – Post-Traumatic Stress Scale) T1: No difference between G1 and G2, $p=0.53$ T2: $G1>G2$, $p=0.07$; mean difference, -2.79 (95% CI, -5.77 to 0.19); $d=0.30$</p> <p>Improvements in dissociation^a (Trauma Symptoms Checklist – Dissociation Scale) T1: No difference between G1 and G2, $p=0.44$ T2: $G1>G2$, $p=0.02$; mean difference, -3.66 (95% CI, -6.58 to -0.74); $d=0.39$</p> <p>Quality of life^a (Life Satisfaction Survey) T1: $G1>G2$, $p=0.006$; mean difference, 0.11 (95% CI, 0.03 to 0.19); $d=0.42$ T2: No difference between G1 and G2, $p=0.38$</p> <p>Secondary Outcomes</p> <p>Positive and negative coping^a (both, Coping Inventory), Global self-worth, social acceptance (both, Self Perception Profile for Children), T1, T2: No differences between G1 and G2</p>

^a intention-to-treat (ITT) analysis

Note: Greater comparative benefit is denoted using a greater (“>”) sign. Cohen’s d effect size index of the difference between groups means: 0.20 = small; 0.50 = medium; 0.80 = large.¹⁷⁶

Abbreviations: CI = confidence interval; G = group; SOE = strength of evidence; T = time

Although this study was rated a low risk of bias and provided precise outcome estimates, we graded the SOE as low for mental and behavioral health outcomes due to the presence of a single study (Table 59).

Table 59. Detailed strength of evidence grading table: Fostering healthy futures

Intervention and Comparator	Outcome	Studies; subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of Effect
Fostering Healthy Futures vs. Inactive Control	Mental and behavioral health	1 RCT ¹³¹ ; 156	L	Unknown, Single Study	Direct	Precise	Low; small to medium ($d=0.30$ to 0.51)

Note: All results are $G1>G2$ unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen’s $d = 0.20$, 0.50, and 0.80.¹⁷⁶

Abbreviations: L = low; RCT = randomized controlled trial; SOE = strength of evidence.

Middle School Success

We identified one RCT (two articles)^{136,137} comparing a low-intensity intervention with routine foster care (usual care). The study targeted older girls (age 10 to 12 years) in foster care (Table 60).

Table 60. Middle school success: Study characteristics

First Author et al., Year	Sample Description (Age Group)	Study Design and Duration ^a	Comparison Groups	Baseline N	Risk of Bias
Smith et al, 2011 ¹³⁷	Girls in foster care (ages 10-12 years)	RCT 6 sessions over 3 weeks Follow-up 6 months postbaseline	G1: MSS G2: RFC	G1: 48 G2: 52 Overall N = 100	Low
Kim and Leve 2011 ¹³⁶	Girls in foster care (ages 10-12 years)	RCT T1: Follow-up 6 months postbaseline ^a T2: 12 months postbaseline T3: 36 months postbaseline	G1: MSS G2: RFC	G1: 48 G2: 52 Overall N = 100	Medium

^aIn the paper, the authors define timepoints as baseline (T1) and followup at 6 months (T2), 12 months (T3), 24 months (T4), and 36 months (T5) postbaseline. We include only the followup timepoints for which KQ 1 outcome data are reported in the paper and renumbered the timepoints accordingly.

Abbreviations: G = group; MSS = Middle School Success; N = number; RCT = randomized controlled trial; RFC = regular foster care control group; T = time.

Key Points

- **Mental and behavioral health:** Compared with usual care, participants in the Middle School Success intervention experienced significantly greater reductions in internalizing problems, frequency of substance use, and use of tobacco and marijuana and significantly greater increases in prosocial behavior compared with youth in routine foster care (low SOE of benefit).

Detailed Synthesis

Table 61 presents the results of the Middle School Success trial;^{136,137} additional study details are provided in the evidence tables (Appendix E). In an article by Smith and colleagues,¹³⁷ the authors examined parent report of child internalizing and externalizing problems as well as prosocial behavior through 6-months postbaseline. The study found that youth in the intervention condition had significant reductions in internalizing and externalizing problems at followup compared with the usual care, taking into account participants' maltreatment history, pubertal development, and internalizing/externalizing problems at baseline. No significant group differences were found for prosocial behavior. In a second paper,¹³⁶ the authors again collected caregiver report data on internalizing and externalizing symptoms and prosocial behavior (using different measures than in the first study). This paper also reports data on substance use and delinquency (behavior, association with a deviant peer, and a composite score based on the mean of girls' own delinquent behavior and her association with delinquent peers), collected via child

self-report. Significant group differences were found in favor of the Middle School Success intervention for prosocial behaviors at both 6- and 12-month followup. At 36 months, participants in the intervention reported less frequent substance use (composite score based on mean of tobacco, alcohol, and marijuana use) and were also less likely to report tobacco or marijuana use over the past 12 months compared with youth in usual care. There were no significant group differences in internalizing and externalizing symptoms or alcohol use; however, a trend in favor of the intervention condition over the control group was found for delinquent behavior and the composite delinquency score (in the prior year).

Table 61. Results: Middle school success

First Author et al., Year	Comparison Groups	Mental and Behavioral Health
Smith et al, 2011 ¹³⁷	G1: MSS G2: RFC	<p>Internalizing/externalizing problems (Parent Daily Report Checklist)</p> <p><u>Internalizing problems</u> G1 > G2, $p < 0.01$</p> <p><u>Externalizing problems</u> G1 > G2, $p < 0.01$</p> <p><u>Prosocial behavior</u> No difference between G1 and G2, $p = \text{ns}$ (NR)</p>
Kim and Leve, 2011 ¹³⁶	G1: MSS G2: RFC	<p>Internalizing and Externalizing Problems (Achenbach System of Empirically Based Assessment/ASEBA)* T1, T2: No difference between G1 and G2, $p = \text{ns}$ (NR)</p> <p>Prosocial behavior (Parent Daily Report)* T1, T2: G1 > G2, $p = 0.03$, $d = 0.46$</p> <p>Composite substance use (Self-Report)* T3: G1 > G2, $p < 0.05$, $d = 0.47$</p> <p>Tobacco use (Self-Report)* T3: G1 > G2, $p = 0.04$, $d = 0.46$</p> <p>Alcohol use (Self-Report)* T3: No difference between G1 and G2, $p = \text{ns}$ (NR)</p> <p>Marijuana use (Self-Report)* T3: G1 > G2, $p = -0.01$, $d = 0.57$</p> <p>Delinquency (Self-Report Delinquency Scale)* <u>Composite Delinquency</u> T3: No difference between G1 and G2, $p = 0.07$, trend; $d = 0.39$</p> <p><u>Delinquent Behavior</u> No difference between G1 and G2, $p = 0.098$, trend; $d = 0.36$</p> <p><u>Association with Deviant Peer</u> T3: No difference between G1 and G2, $p = \text{ns}$ (NR), trend; $d = 0.35$</p>

Note: Greater comparative benefit is denoted using a greater (“>”) sign. Cohen’s d effect size index of the difference between groups means: 0.20 = small; 0.50 = medium; 0.80 = large.¹⁷⁶

Abbreviations: MSS = Middle School Success; N = number; RCT = randomized controlled trial; RFC = regular foster care control group. * = ITT analysis

We graded the SOE as low due to the presence of a single study (Table 62).

Table 62. Detailed strength of evidence grading table: Middle school success

Intervention and Comparator	Outcome	Studies; Subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of Effect
MSS vs. usual care	Mental and behavioral health	1 RCT ^{136,137} ; 100	L/M	Unknown, single study	Direct	Precise	Low; small to medium (d=0.35 to 0.57)

Note: All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as: Cohen's $d = 0.20, 0.50$, and 0.80 .¹⁷⁶

Abbreviations: L = low; M = medium; MSS = Middle School Success; RCT = randomized controlled trial; SOE = strength of evidence.

Multidimensional Treatment Foster Care for Preschoolers

We identified five articles relevant to KQ 1 outcomes for a trial evaluation of Multidimensional Treatment Foster Care for Preschoolers (MTFC-P),^{138,139,141,142,179} comparing this high-intensity foster care intervention to usual care (Table 63). The study was targeted at young children (3 to 6 years of age), foster or kin caregiver, and permanent placement resource (birth parents and adoptive relatives or nonrelatives).

Table 63. Multidimensional treatment foster care for preschoolers: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Fisher et al., 2007, ¹³⁹ Fisher et al., 2007, ¹⁴² Fisher and Stoolmiller, 2008, ¹⁴¹ and Bruce et al., 2009, ¹³⁸ Fisher et al., 2011 ¹⁷⁹ United States	Children ages 3 to 6 years in new foster placement, expected duration >3 months	RCT 12 months ^a	G1: MTFC-P G2 Usual care	G1: 57 ^a G2: 60 ^a	Medium

^a Bruce et al., 2009 timing of assessment is not specified, G1: 10, G2: 13.

Abbreviations: G = group; MTFC-P = Multidimensional Treatment Foster Care for Preschoolers; NR = not reported; RCT = randomized controlled trial.

Key Points

- **Mental and behavioral health:** Children who participated in MTFC-P exhibited more normative (regulated) cortisol levels compared with children in usual foster care (low SOE of benefit).^{138,142,179}
- **Healthy caregiver-child relationship:** Compared with usual care, children who participated in MTFC-P had significantly greater increases in secure attachment behavior and decreases in avoidant attachment behavior; additionally, caregivers who participated in MTFC reported significantly less stress related to child problem behaviors (low SOE of benefit).^{139,141}
- **Healthy development:** Compared with usual care, children who participated in MTFC-P exhibited significantly higher levels of electrophysiological functioning during a cognitive task; however, there was no significant difference in efficacy of the intervention on cognitive functioning as measured by a behavioral assessment (low SOE of benefit).¹³⁸

Detailed Synthesis

Table 64 presents the results of the MTFC-P trial in regards to KQ1 outcomes;^{138,139,141,142,179} additional study details are provided in the evidence tables. An article by Fisher and colleagues¹⁴² that examined cortisol regulation (morning level, evening level, and morning-to-evening change) found that children in MTFC-P were significantly more likely to exhibit a pattern of relative cortisol stability whereas the children in usual care exhibited a significant decline (medium effect sizes). Another paper¹⁷⁹ examined cortisol regulation among children who had experienced a placement change and found that children in MTFC-P experienced more typical morning-to-evening cortisol levels (e.g., higher in the morning and lower in the evening) following a placement change than children in regular foster care following a placement change. Regular foster care subjects had relatively blunted cortisol patterns from morning to evening.

Table 64. Results: Multidimensional treatment foster care for preschoolers versus usual care

First Author et al., Year	Comparison Groups	Mental and Behavioral Health	Healthy Caregiver-Child Relationship	Healthy Development
Fisher and Kim, 2007 ¹³⁹	G1: MTFC-P G2: Usual care	NA	<p>Improved Trajectory (Increase) in Secure Attachment Behavior (Parent Attachment Diary) G1>G2, p<0.05</p> <p>Improved Trajectory (Decrease) in Avoidant Attachment Behavior (Parent Attachment Diary) G1>G2, p<0.05</p> <p>Improved Trajectory (Decrease) in Resistant Attachment Behavior (Parent Attachment Diary) No difference between G1⁺ and G2⁺, p=NS(NR)</p>	NA
Fisher et al., 2007 ¹⁴²	G1: MTFC-P G2: usual care	<p>Decrease AM-PM Change in Diurnal Salivary Cortisol G1^{ns}>G2: p=0.040, d=-0.64</p> <p>Decrease AM Cortisol level G1^{ns}>G2, p=0.027, d=-0.66</p> <p>Decrease PM Cortisol level G1⁺>G2, p=0.019, d=-0.68</p>	NA	NA

Table 64. Results: Multidimensional treatment foster care for preschoolers versus usual care (continued)

First Author et al., Year	Comparison Groups	Mental and Behavioral Health	Healthy Caregiver-Child Relationship	Healthy Development
Fisher and Stoolmiller, 2008 ¹⁴¹	G1: MTFC-P G2: usual care	NA	Decrease in Caregiver Stress Related to Child Problem Behaviors (Parent Daily Report) T1: $G1^+ > G2$, $p=0.009$ T2: No difference between group G1 and G2, $p=0.734$	NA
Bruce et al., 2009 ¹³⁸	G1: MTFC-P G2: usual care	NA	NA	Cognitive Control and Response Monitoring (Flanker Task) Errors of Commission No difference between G1 and G2, $p=NR(NS)$ Reaction Time No difference between G1 and G2, $p=NS(NR)$
Bruce et al., 2009 ¹³⁸ (continued)				EEG ERP in Response to Feedback Response Locked Components $G1 > G2$, $p < 0.01$ Feedback Locked Components $G1 > G2$, $p < 0.01$
Fisher et al., 2011 ¹⁷⁹	G1: MTFC-P G2: RFC	More typical patterns of morning-to-evening cortisol levels following placement changes $G1 > G2$, $p < 0.001$	NA	NA

Note: Greater comparative benefit is denoted using a greater (“>”) sign. Cohen’s *d* effect size index of the difference between groups means: 0.20 = small; 0.50 = medium; 0.80 = large.¹⁷⁶

Abbreviations: AM = ante meridiem; EEG = electroencephalogram; ERP = Event Related Potentials; G = group; MTFC-P = Multidimensional Treatment Foster Care for Preschoolers; NA = not applicable; NR = not reported; NS = not significant; PM = post meridiem; SOE = strength of evidence; T = time.

In other papers, Fisher and colleagues^{139,141} examined outcomes reflective of the caregiver-child relationship. Fisher and Kim,¹³⁹ examined child attachment behavior as reported by the caregiver. The study found significant differences in report of increased secure attachment behaviors and decreased insecure-avoidant attachment behavior favoring the MTFC-P condition. No group differences were found for insecure-resistant behavior. In a second study examining caregiver-child relationship outcomes, Fisher and Stoolmiller¹⁷⁹ found that caregiver report of stress in response to child problem behaviors showed significantly greater declines compared with usual care, with an early decline in stress during the initial 2 study months that remained stable over the ensuing 10 months.

A fifth article examined cognitive functioning across study conditions.¹³⁸ The authors measured children’s behavioral performance during cognitive tasks (cognitive control and

response monitoring) and electrophysiological response (a substrate of cognitive processing) to cognitive tasks. Participants in MTFC-P did not differ significantly from usual care children on tasks of self-monitoring (“errors of commission”) or reaction time to response. However, electrophysiological responses (measured by EEG) to external stimuli (“response locked” and “feedback locked” conditions) during cognitive tasks showed significant improvement for MTFC-P relative to usual care (response locked $F=5.66$, $p<0.01$; feedback locked, $F=5.82$, $p<0.01$).

We graded the SOE as low for the mental and behavioral health, caregiver-child relationship, and developmental outcomes due to the presence of a single study (Table 65).

Table 65. Detailed strength of evidence grading table: Multidimensional treatment foster care for preschoolers

Intervention and Comparator	Outcome	Studies; Subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of Effect
MTFC-P vs. usual care	Mental and behavioral health	1 RCT; ¹⁴² 117	M	Unknown, single study	Direct	Precise	Low; $m(d=0.64$ to $0.68)$
	Healthy caregiver-child relationship	1 RCT ^{139,141} ; 117	M	Unknown, single study	Indirect	Precise	Low; NR
	Healthy development	1 RCT; ¹³⁸ 23	M	Unknown, single study	Direct	Precise	Low; NR

Note: All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as: Cohen’s $d = 0.20$, 0.50 , and 0.80 .

Abbreviations: M = medium; MTFC-P = Multidimensional Treatment Foster Care for Preschoolers; NR = not reported; RCT = randomized controlled trial; SOE = strength of evidence.

Enhanced Foster Care, Summary of Strength of Evidence Grades

We summarize the SOE grade for all enhanced foster care interventions in Table 66.

Table 66. Enhanced Foster Care Interventions: Summary strength of evidence for child well-being outcomes

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence Magnitude of Effect
Bucharest Early Intervention Project	Usual care (institutional care in Romania)	Mental and behavioral health	1 ^{118,120,123,125,129} ; 136	Low; odds ratio 2.8 [95%CI 1.2 to 6.4]
		Healthy caregiver-child relationship	1 ^{121,125,127} ; 136	Low; NR
		Healthy development	1 ^{117,119,121,122,124,126,128} ; 136	Low; effect size ^a =0.47 or 0.62
Fostering Healthy Futures	Inactive control	Mental and behavioral health	1 ¹³¹ ; 156	Low; small to medium ($d=0.30$ to 0.51)
Middle School Success	Usual care	Mental and behavioral health	1 ^{136,137} ; 100	Low; small to medium ($d=0.35$ to 0.57)
Multi-dimensional Treatment Foster Care for Preschoolers	Usual care	Mental and behavioral health	1 ^{142,179} ; 117	Low; medium ($d=0.64$ to 0.68)
		Healthy caregiver-child relationship	1 ^{139,141} ; 117	Low; NR
		Healthy development	1 ¹³⁸ ; 23	Low; NR

^aEffect size measure is not specified, therefore we did not classify the magnitude of effect as small, medium, or large.

Note: All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as: Cohen’s $d = 0.20$, 0.50 , and 0.80 .¹⁷⁶

Abbreviations: CV = control videotape group; G = group; NR = not reported; RCT = randomized clinical trial; VI = videotape intervention.

Key Question 2. Comparative Effectiveness of Interventions for Improving Child Welfare Outcomes

Organization

As in KQ 1, we organize KQ 2 by intervention type (parenting, trauma-focused, and enhanced foster care approaches). We begin this section with a description of included studies and an accompanying table presenting the number of trials and articles investigating child welfare outcomes by intervention type. Next, for each subsection, we begin with an overview of key features of the evidence base for the intervention type and then present the findings for each intervention. Findings include very brief key points presenting the main findings for KQ outcomes and the corresponding strength of evidence (SOE) grade. Immediately following the key points is a detailed synthesis of the findings for each intervention, providing information about study characteristics, the specific results (including magnitude of effect, if provided by study authors), and the SOE by grading domain (risk of bias, consistency, directness, and precision). Please refer to the Strength of Evidence Grading section in the Methods chapter for further detail about the SOE grading criteria.

We remind the reader that benefit is denoted in the results tables using a greater (“>”) sign (e.g., Group 1 > Group 2). Also, the results tables present within-group changes denoted as improvement (“+”), detriment (“-”), or nonsignificant change (“ns”) for studies that provided these data.

Parenting Interventions

Description of Included Studies

Table 67 presents the five trials (five articles) evaluating four parenting interventions included in KQ 2.

Table 67. Number of trials and articles investigating child welfare outcomes by intervention type

Parenting Intervention	Trials
Keeping Foster and Kinship Parents Trained and Supported ⁹²	1
Nurse Home Visitation Intervention ⁹³	1
Parent-Child Interaction Therapy Adaptation Package ^{95,96}	2
SafeCare ¹⁰⁰	1
Total	5

Below we provide an overview of the key features in the body of evidence for parenting interventions.

- All five trials were randomized controlled trials (RCTs).
- Four trials were effectiveness trials.^{92,93,95,100}
- Four of the trials targeted maltreating parents and assessed safety outcomes.^{93,95,96,100}
- One trial targeted foster and kinship parents and assessed both placement stability and permanency outcomes.⁹²
- All five trials compared the experimental intervention with usual care.^{92,93,95,96,100}

Keeping Foster and Kinship Parents Trained and Supported

We identified one large RCT comparing the effectiveness of the Keeping Foster and Kinship Parents Trained and Supported (KEEP) intervention with a usual care group for improving child welfare outcomes (Table 68).⁹² This RCT also reported outcomes relevant to KQ 1 (see previous section of Results chapter).

Table 68. Keeping foster and kinship parents trained and supported: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Price et al., 2008 ⁹² United States	Foster children ages 5 to 12 years. Placed ≥30 days	RCT Placement status assessed at intervention end or 2 to 11 months postbaseline (if child exited current placement prior to intervention end) Child exits within 200 days (approximately 6.5 months) postbaseline	G1: KEEP G2: usual care	G1: 359 G2: 341 Overall N = 700	Medium

Abbreviations: G = group; KEEP = Keeping Foster and Kinship Parents Trained and Supported; N = number; RCT = randomized controlled trial.

Key Points

- **Placement stability:** Comparing usual care with KEEP, there was no difference in placement stability outcomes in one trial (insufficient evidence).⁹²
- **Permanency:** Compared with usual care, participants in KEEP had a significantly greater proportion of positive exits from foster care (e.g., reunification with biological parent or another relative or adoption for the duration of the study period) (moderate SOE for benefit).⁹²

Detailed Synthesis

Table 69 presents the results for the KEEP trial; additional study details are provided in the evidence tables (Appendix E).⁹² Using child welfare records, the study authors examined negative placement changes (e.g., child being moved to a new foster care placement, a more restrictive environment such as psychiatric care or juvenile detention center, or child runaways), as a measure of placement instability. The authors also examined positive placement changes, defined as positive exits from foster care such as reunification with the biological parent or another relative or adoption. Although these positive placement exits were not identified as permanency outcomes in the study, we categorized them as such here with the caveat that they were outcomes sustained for the duration of the study. Results from Cox hazard models revealed children in KEEP were nearly twice as likely to exit their foster or kinship placement home for positive reasons compared with those in the usual care group. This finding was for the full sample, which included children with as many as 20 previous placements. Rates of negative placement changes were not significantly different between the two groups. However, the study found that number of previous placements was a significant predictor of hazard of placement disruption (i.e., negative exit) and that the intervention “mitigated the negative risk-enhancing effect of a history of multiple placements.” The authors also found that children living with a relative (kinship placement) and those with longer placements were less likely to have any placement change during the intervention period.

Table 69. Results: Keeping foster and kinship parents trained and supported versus usual care

First Author et al., Year	Comparison Groups	Placement Stability	Permanency
Price et al., 2008 ⁹²	G1: KEEP G2: Usual care	Percentage with Negative Placement Change No difference between G1 and G2, p=ns (NR)	Percentage with Positive Placement Exit G1 > G2, p=0.005

Note: Greater comparative benefit is denoted in the results tables using a greater (“>”) sign.

Abbreviations: G = group; KEEP = Keeping Foster and Kinship Parents Trained and Supported; NR = not reported; ns = not significant.

Although the body of evidence is limited to a single study for KEEP, we graded the SOE as moderate for positive permanency outcomes due to the size of the study and because it was an effectiveness trial (Table 70). We graded the SOE as insufficient for placement stability due to nonsignificant findings.

Table 70. Detailed strength of evidence grading table: Keeping foster and kinship parents trained and supported

Intervention and Comparator	Outcome	Studies; Subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of Effect
KEEP vs. usual care	Placement stability	1 RCT; ⁹² 700	M	Unknown, single study	Direct	Imprecise	Insufficient
	Permanency	1 RCT; ⁹² 700	M	Unknown, single study	Direct	Precise	Moderate; NR

Note: All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis.

Abbreviations: KEEP = Keeping Foster and Kinship Parents Trained and Supported; M = medium; NR = not reported; RCT = randomized controlled trial; SOE = strength of evidence.

Nurse Home Visitation Intervention

We identified one RCT comparing the effectiveness of a nurse home visitation (NHV) intervention with a usual care group for improving child welfare outcomes (Table 71).⁹³ This RCT also reported outcomes relevant to KQ 1 (see previous section of Results chapter).

Table 71. Nurse home visitation intervention: Study characteristics

First Author et al., Year County	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
MacMillan et al., 2005 ⁹³ Canada	Physically abused or neglected children 13 years and younger and their primary caregivers	RCT T1: 1 year postbaseline T2: 2 years postbaseline T3: 3 years postbaseline	G1: NHV G2: usual care	G1: 89 G2: 74 Overall N=163	Low

Abbreviations: G = group; N = number; NHV = nurse home visitation intervention; T = time

Key Points

- **Safety:** Compared with usual care, there was no significant difference in efficacy of the intervention on maltreatment recurrence based on Child Protective Services (CPS) records whereas hospital records showed significantly higher rates of recidivism for the NHV condition compared with usual care (insufficient SOE).⁹³

Detailed Synthesis

Table 72 presents the results of the NHV trial for child welfare outcomes;⁹³ additional study details are provided in the evidence tables (Appendix E). The authors used both CPS records and hospital records to assess safety outcomes. Based on the CPS data, no significant differences emerged in favor of the NHV on any of the safety measures: incidence of physical abuse, days to first incident of physical abuse, or severity of physical abuse incidents. There was a borderline significant difference between the intervention and comparison groups in the severity of neglect incidents, favoring the intervention group; however, the authors indicate that the difference was not clinically important. The no-difference finding using the CPS data was not consistent with hospital data, which showed the recurrence of physical abuse and/or neglect was significantly more likely in the NHV group than the usual care group (23.6% versus 10.8%). The authors suggest this finding may be the result of detection bias as a function of the nurse home visitors “identifying the need for medical care in children in the visited families.” The authors also note that “the potential for harm should not be overlooked” but that the finding related to the hospital data needs to be “taken in the context of...no clinically meaningful differences between groups” based on child welfare records.

Table 72. Results: Nurse home visitation intervention versus usual care

First Author et al., Year	Comparison Groups	Safety
MacMillan et al., 2005 ⁹³	G1: NHV G2: Usual care	<p>Incidence of physical abuse and/or neglect, days to first incident of physical abuse or neglect, severity of physical abuse All, p=ns (NR)</p> <p>Severity of neglect G1 > G2, p=0.053</p> <p>Recurrence of physical abuse or neglect G1<G2, p=NR (sig); 23.6% vs. 10.8%, difference 12.8% [95% CI, 1.4 to 24.1]</p>

Note: Greater comparative benefit is denoted in the results tables using a greater (“>”) sign.

Abbreviations: CI = confidence interval; G = group; NHV = nurse home visitation intervention; NR = not reported; ns = not significant; sig = significant.

We graded the SOE for this effectiveness trial as insufficient due to conflicting evidence on safety outcomes depending on the measure (Table 73).

Table 73. Detailed strength of evidence grading table: Nurse home visitation intervention

Intervention and Comparator	Outcome	Studies; Subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of Effect
NHV vs. Usual care	Safety	1, ⁹³ 163	M	Unknown, single study	Direct	Imprecise	Insufficient

Abbreviations: M = medium; NHV = nurse home visitation intervention; SOE = strength of evidence.

Parent-Child Interaction Therapy Adaptation Package

We identified two RCTs evaluating an adaptation of PCIT for maltreating parents that combined PCIT with a self-motivational orientation intervention (the combined approach is referred to here as a PCIT Adaptation “Package” or PCIT-AP) (Table 74).^{95,96} The first trial⁹⁶ was an efficacy study comparing PCIT-AP with a standard parenting program (usual care) for child welfare-involved clients and with an “enhanced” version of the experimental intervention that also provided families with individualized services and home visits to reinforce skills learned during the clinical sessions. The study targeted physically abusive caregivers and their

children, age 4 to 12 years; many families had histories of multiple reports to CPS and severe parent-to-child violence. The second RCT⁹⁵ was an effectiveness study examining the relative effects of the PCIT and the motivational intervention components compared with the usual care (standard orientation and parenting program). This study targeted physically abusive or neglecting caregivers and their children, age 2.5 to 12 years, as long as the caregiver had access to the child. The standard parenting program was developed at the provider agency and comprised three modules: (a) an orientation group to introduce parents to agency services and provide information about listening skills, how parenting practices influence children, and how the parents' own upbringing has influenced the way in which they discipline and parent their children; (b) a parenting-skills group in which parents learned about child development, discipline, praise, behavior management, communication strategies, stress management, and the ways in which parental problems affect children; and (c) an anger management group. The overall approach relied on discussions of how parenting was conceptualized by the parent, identifying and regulating emotions, and verbal problem solving.

Table 74. Parent-child interaction therapy adaptation package: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Chaffin, 2004 ⁹⁶ United States	Physically abused children ages 4 to 12 years and their caregivers	RCT Median follow-up time=850 days postbaseline	G1: PCIT-AP G2: PCIT-AP enhanced G3: SAU	G1: 42 G2: 33 G3: 35 Overall N=110	Medium
Chaffin, 2011 ⁹⁵ United States	Neglected or physically abused children ages 2.5 to 12 years and their caregivers	RCT Median follow-up time=904 days postbaseline	G1: PCIT-AP G2: SM + SAU parenting program G3: PCIT + SAU orientation G4: Usual care	G1: 34 G2: 41 G3: 36 G4: 42 Overall N=153 ^a	Low

^a Initial randomization to the orientation group conditions: N=192.

Abbreviations: G = group; N = number; PCIT-AP = Parent-Child Interaction Therapy Adaptation Package (i.e., PCIT combined with self-motivational orientation); RCT = randomized controlled trial; SAU = services as usual (community standard orientation + parenting program); SM = self-motivational orientation.

Key Points

- Safety
 - An efficacy trial showed benefit for PCIT-AP compared with services as usual in reducing child maltreatment recidivism (reports to the child welfare system).⁹⁶ In a second RCT that was an effectiveness trial, there was not a significant difference between PCIT-AP and usual care in recidivism, although a trend was found in favor of the intervention (low SOE of benefit).⁹⁵
 - An enhanced version of the intervention that provided individualized services and home visits showed no significant difference in efficacy on recidivism compared with PCIT-AP (insufficient SOE).⁹⁶
 - In an effectiveness trial, PCIT-AP resulted in significantly reduced recidivism compared with the community standard parenting program combined with the experimental self-motivational orientation (low SOE).⁹⁵

- In an effectiveness trial, PCIT-AP resulted in significantly reduced recidivism compared with PCIT combined with the community standard orientation (low SOE).⁹⁵

Detailed Synthesis

Table 75 presents the results of the two PCIT-AP trials;⁹⁶ additional study details are provided in the evidence tables (Appendix E). In the first trial, Chaffin and colleagues⁹⁶ analyzed recidivism using survival analysis (length of time to event-free survival) and found the PCIT-AP condition was more efficacious than usual care. The authors also found there was no statistically significant difference between the enhanced condition and either usual care or PCIT-AP, although there was a trend for PCIT-AP to have better survival than the enhanced PCIT condition. The second trial, an effectiveness study,⁹⁵ again examined survival outcomes and found that the combination of PCIT and the self-motivational intervention resulted in significantly reduced recidivism rates compared with services as usual. The authors reported outcomes using a primary model with observed risk intervals and also an imputed event history model where there was imputation on survival outcomes during only risk-deprived intervals (i.e., times when the child was not with the caregiver). Findings were comparable across modeling approaches, with the greatest benefit for children living at home or who had returned to their home earlier rather than later.

Table 75. Results: Parent-child interaction therapy adaptation package versus variant versus usual care

First Author et al., Year	Comparison Groups	Safety
Chaffin, 2004 ⁹⁶	G1: PCIT-AP G2: PCIT-AP enhanced G3: SAU	Recurrence of Maltreatment^a G1>G3, p=0.02 No difference between G1 and G2, p=0.13 No difference between G2 and G3, p=ns [NR]
Chaffin, 2011 ⁹⁵	G1: PCIT-AP G2: SM + SAU parenting program G3: SAU orientation + PCIT G4: SAU	Recurrence of maltreatment (adjusted for risk deprivation)^a G1>G2, HR=0.10, p<0.05 ^b G1>G3, HR=0.11, p<0.05 ^c G1>G4, HR=0.20, p=NR, trend ^c

^a Intention-to-treat (ITT) analysis

^bPoint estimate, standard error, and confidence interval of hazard ratio not provided by authors.

^c The authors present model estimated Cox regression curves for the four study groups showing the expected survival of all participants who were at risk for an event during the entire follow-up interval. The authors provide the hazard ratio but not confidence intervals for the survival curves and describe a “sizable trend” in regards to the benefit of PCIT-AP over standard services (orientation and parenting program).

Note: Greater comparative benefit is denoted in the results tables using a greater (“>”) sign.

Abbreviations: G = group; HR =hazard ratio; NR = not reported; NS = not significant; PCIT-AP = Parent-Child Interaction Therapy Adaptation Package (i.e., PCIT combined with self-motivational orientation); SAU = services as usual (community standard orientation + parenting program); SM = self-motivational orientation.

The authors also examined the relative effects of PCIT and the self-motivational orientation by contrasting varying combinations of experimental and usual care service components (again, see Table 75). The results, which showed benefit for PCIT-AP over other combinations, suggest a “synergistic” effect of combining PCIT with a motivational intervention in reducing future child abuse reports.

We graded the SOE as low for PCIT-AP compared with usual care in improving child welfare outcomes based on the results of two studies, one of which was an effectiveness trial, demonstrating precise estimates for direct outcomes and consistent benefit in favor of the intervention across studies (Table 76). We graded the SOE as insufficient for addressing child welfare outcomes for PCIT-AP compared with an enhanced version due to nonsignificant findings. We also graded the SOE as insufficient for PCIT-AP enhanced compared with usual care, again, due to nonsignificant findings.

Table 76. Detailed strength of evidence grading table: Parent-child interaction therapy adaptation package

Intervention and Comparator	Outcome	Studies; Subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of Effect
PCIT-AP vs. usual care	Safety	2; ^{95,96} 153	L/M	Consistent	Direct	Precise	Low; NR ^a
PCIT-AP vs. PCIT-AP Enhanced ^b	Safety	1; ⁹⁶ 75	M	Unknown, single study	Direct	Imprecise	Insufficient
PCIT-AP Enhanced ^b vs. usual care	Safety	1; ⁹⁶ 88	M	Unknown, single study	Direct	Imprecise	Insufficient

^aChaffin et al, 2011 reports a hazard ratio but it is not statistically significant (i.e., reported as a trend).

^b“Enhanced” refers to the provision of individualized services to the parents.

Note: All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis.

Abbreviations: L = low; M = medium; NR = not reported; PCIT-AP = Parent-Child Interaction Therapy Adaptation Package (i.e., PCIT combined with self-motivational orientation); SOE = strength of evidence.

SafeCare

We identified one large RCT comparing the effectiveness of SafeCare with usual care for improving child welfare outcomes (Table 77).¹⁰⁰ The study targeted children and their maltreating parents (nonsexual abusers) living in six CPS administrative regions in one state who were involved in community home-based services provided by CPS contract agencies. In the first stage of a nested design, the six regions were randomly assigned to SafeCare or services as usual (SAU) conditions, both of which utilized home visitors. A second stage assigned home visitors to a coached or uncoached condition (as an implementation quality control strategy). SafeCare and SAU services were comparable with the exception of the SafeCare modules (e.g., home visitors across study conditions had similar caseloads, qualifications, and funding, and service administrative goals were comparable). The mean duration of both conditions was 6 months, with SafeCare involving at least weekly home visits and the SAU group receiving monthly home visits. Participants were children up to 12 years of age, with the majority (76%) of preschool age. The usual SafeCare inclusion criteria of a preschool-aged child and absence of untreated parental substance abuse disorder were suspended for this study; the intervention itself was not changed.

Table 77. SafeCare: Study characteristics

First Author et al., Year	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Chaffin et al., 2012 ¹⁰⁰ United States	Children up to age 12 and caregivers involved in home-based care through Child Protective Services (mean age, SD, NR)	RCT Average time to followup = 6 years	G1: SafeCare G2: SAU	G1: 1153 G2: 1022 Overall N = 2175	Low

Abbreviations: G = group; N = number; RCT = randomized controlled trial; SAU = services as usual; SD = standard deviation.

Key Points

- **Safety:** SafeCare resulted in significantly reduced child maltreatment recidivism (reports to the child welfare system) compared with usual care.¹⁰⁰

Detailed Synthesis

Table 78 presents the results of the SafeCare trial;¹⁰⁰ additional study details are provided in the evidence tables (Appendix E). The primary outcome of interest was child maltreatment recidivism in the form of repeat reports to CPS. Data relevant to KQ 1 were collected but not reported as group contrasts. The authors used two strategies of propensity stratification to equalize differences across home visitors (creating home visit case pairings). The first strategy “divided Cartesian propensity score plots into 4 quadrants plus a central area.” The one quadrant that was unbalanced was dropped. The authors refer to this as the “4-strata solution,” which captured 185 of 219 home visitors and 2,035 of 2,175 cases. The second approach used coarsened exact matching (CEM), which “coarsens or bins continuous variables that otherwise are difficult to match exactly, then seeks exact matches, yielding more homogenous strata but at the expense of excluding cases.” This approach resulted in a 6-strata CEM solution, which matched 68 home visitors and 959 cases. Survival analysis of time to maltreatment recidivism indicated a main effect for SafeCare (regardless of coaching) relative to the SAU (regardless of coaching) across the entire study population (i.e., across all ages) and also for the preschool-age subpopulation. Based on the resulting hazard ratios, the authors estimated that SafeCare would prevent 64 to 104 first-year recurrences per 1,000 treated cases. Although not directly related to the comparisons of interest, two points should be noted. First, intervention compliance was similarly high across conditions and those receiving a higher intervention dosage, regardless of group assignment, recidivated at lower levels. Second, the study showed a main effect for the benefit of coaching (for the full population using the 4-strata approach); however, the findings were reported only at the level of coaching (yes or no) and not at the level of four-way contrasts (i.e., SafeCare with or without coaching compared with SAU with or without coaching). Therefore, these data are not presented in results table.

Table 78. Results: SafeCare versus usual care

First Author et al., Year	Comparison Groups	Safety
Chaffin, et al., 2012 ⁹⁶	G1: SafeCare G2: SAU	CPS Recidivism* <i>4-strata pooled effect:</i> G1 > G2, p = 0.03 (full population) Estimate=-0.186 (SE=0.087), HR=0.83 [95% CI, 0.70 to 0.98] G1 > G2, p = 0.016 (preschool subpopulation) Estimate=-0.301 (SE=0.125), HR=0.74 [95% CI, 0.58 to 0.95] <i>Coarsened Exact Matching (CEM):</i> G1 > G2, p = 0.001 (full population) Estimate=-0.181 (SE=0.056), HR=0.83 [95% CI, 0.75 to 0.93] G1 > G2, p < 0.005 (preschool subpopulation) Estimate=-0.241 (SE=0.086), HR=0.79 [95% CI, 0.66 to 0.93]

Note: Greater comparative benefit is denoted in the results tables using a greater (“>”) sign.

Abbreviations: CI = confidence interval; CPS = Child Protective Services; G = group; HR = hazard ratio; SE = standard error;

* = ITT analyses

Although the body of evidence regarding the comparisons studied is limited to a single trial for SafeCare, we graded the SOE as moderate for child welfare outcomes due to the size of the study and because it was an effectiveness trial (Table 79).

Table 79. Detailed strength of evidence grading table: SafeCare

Intervention and Comparator	Outcome	Studies; Subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of Effect
SafeCare vs. Usual Care	Safety	1; ¹⁰⁰ 2175	L	Unknown, single study	Direct	Precise	Moderate; HR=0.74 to 0.83

Note: All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis.

Abbreviations: L = low; HR = hazard ratio; SOE = strength of evidence.

Parenting Interventions, Summary Strength of Evidence Grades

We summarize the SOE grade for all parenting interventions in Table 80.

Table 1. Parenting interventions: Summary strength of evidence for child welfare outcomes

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence; Magnitude of Effect
Keeping Foster and Kinship Parents Trained and Supported	Usual care	Placement Stability	1 ⁹¹ ; 700	Insufficient
		Permanency	1 ⁹¹ ; 700	Moderate; NR
Nurse Home Visitation Intervention	Usual care	Safety	1 ⁹³ ; 163	Insufficient
PCIT Adaptation Package	PCIT Adaptation Package enhanced ^a	Safety	1 ⁹⁶ ; 75	Insufficient
	Usual care	Safety	2 ^{95,96} ; 153	Low; NR ^b
PCIT Adaptation Package enhanced ^a	Usual care	Safety	1 ⁹⁶ ; 88	Insufficient
SafeCare	Usual Care	Safety	1, ¹⁰⁰ 2175	Moderate; HR=0.74 to 0.83

^a“Enhanced” refers to the provision of individualized services to the parents.

^bChaffin et al, 2011 reports a hazard ratio but it is not statistically significant (i.e., reported as a trend).

Note: Greater comparative benefit is denoted using a greater (“>”) sign. All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Authors do not report effect sizes for some of the outcomes presented in this table.

Abbreviations: HR = hazard ratio; NR = not reported; PCIT = Parent-Child Interaction Therapy.

Trauma-Focused Treatments

We did not identify any trauma-focused treatments that assessed KQ 2 outcomes, as their focus is ameliorating children’s mental and behavioral symptoms.

Enhanced Foster Care Interventions

Description of Included Studies

Table 81 presents the four trials (six articles) evaluating enhanced foster care interventions included in KQ 2.

Table 81. Number of trials and articles investigating child welfare outcomes by intervention type

Enhanced Foster Care Interventions	Trials
Fostering Healthy Futures ¹³²	1
Middle School Success ¹³⁶	1
Multidimensional Treatment Foster Care for Preschoolers ^{140,143}	1 ^b
New Orleans Intervention ¹³⁰	1
Total	4

^bReported in two articles.

Below we provide an overview of the key features in the body of evidence for parenting interventions.

- Three of the trials were RCTs^{132,136,140,143}; the other was a nonconcurrent cohort study.¹³⁰
- None of the trials were effectiveness trials.
- One intervention targets the child only.¹³²
- All four trials target particular age subgroups:
 - Two in early childhood.^{130,140,143}
 - One in middle childhood.¹³²

- One in early adolescence.¹³⁶
- One trial compares the experimental intervention with an inactive control group (assessment only).¹³²
- Three studies compare the experimental intervention with a usual care group.^{130,136,140,143,144}
- One study reported safety outcomes.¹³⁰
- Two trials reported placement stability outcomes.^{132,136}
- Three studies reported permanency outcomes.^{130,140,143}

Fostering Healthy Futures

We identified one RCT (one article) comparing Fostering Healthy Futures (FHF) with an inactive control (an assessment-only group) for improving child welfare outcomes (Table 82).¹³² This RCT also reported outcomes relevant to KQ 1 (see previous section of Results chapter). This article reports placement changes, placement in residential treatment facilities (a negative placement outcome), and permanency outcomes (attainment; type) among maltreated youth age 9 to 11 in foster care.

Table 82. Fostering healthy futures: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Taussig et al., 2012 ¹³² United States	Children in foster care (ages 9 to 11 years)	RCT (approximately 9 months in duration) Postintervention: 11 to 13 months postbaseline Followup: 6-month postintervention end	G1: Fostering Healthy Futures G2: Inactive control	G1: 56 G2: 54 Overall N=110	Low

Abbreviations: G = group; N = number; RCT = randomized controlled trial.

Key Points

- **Placement stability:**
 - No significant difference in efficacy of FHF on placement changes was found for the total sample; however, among children in nonrelative foster care, participants in FHF had fewer placement changes compared with an inactive control (low SOE for benefit).¹³²
 - Participants in FHF were less likely to be placed in a residential treatment center compared with an inactive control; similar results in favor of FHF were shown for the subsample of children placed in nonrelative foster care (low SOE for benefit).¹³²
- **Permanency:**
 - No significant difference in efficacy of FHF on permanency was found for the total sample; however, among children placed in nonrelative foster care, participants in FHF were more likely to attain permanency compared with an inactive control.¹³²
 - Participants in FHF without termination of parental rights or in foster care were more likely to be reunified compared with their counterparts in an inactive control group (low SOE of benefit).¹³²

Detailed Synthesis

Table 83 presents the results of the FHF trial reporting outcomes relevant to KQ 2;¹³² additional study details are provided in the evidence tables (Appendix E). The authors examined whether children experienced a new placement in a residential treatment center, whether children attained permanency (using case closure as the index of permanency), and type of permanency (adoption or reunification with biological parents). At least a quarter of all children in the sample had been to a residential treatment center before receiving the intervention (children in residential treatment centers, a type of psychiatric facility for youth and children, are likely to receive psychotropic medications and several types of psychotherapeutic interventions). Controlling for preintervention placement in a residential treatment center, along with several other covariates (type of baseline placement and baseline externalizing behavior problems), the study found no statistically significant difference between groups for number of placement changes or attainment of permanency, although findings were in the expected direction in favor of the FHF. Descriptive analyses showed that most of the children who were living with a relative (kinship care) at baseline experienced few placement changes, were not subsequently placed in a residential treatment center, and achieved permanency within the study period. Thus, the authors did subgroup analyses on the children living in nonrelative foster care as they represented a group more likely to have unstable placements. Among this subgroup, the study found significant benefit for FHF on placement changes, residential treatment center placement, and permanency outcomes. Treatment effects on reunification were estimated for the subsample of youth whose parental rights had not been terminated; a greater proportion of FHF participants, both across the total sample and for the subsample of youth in foster care, had reunified 1-year postintervention compared with the control youth. Treatment effects on adoption could not be calculated because of the small number of cases per cell.

Table 83. Results: Fostering healthy futures versus inactive control

First Author et al., Year	Comparison Groups	Placement	Permanency
Taussig et al., 2012 ¹³²	G1: Fostering Healthy Futures G2: Inactive control	<p>Placement Stability^a <u>Total sample:</u> No difference between G1 and G2, $p=0.17$</p> <p><u>Foster care:</u> $G1 > G2$, $p=0.03$, OR=0.56 [95% CI, 0.34 to 0.93]</p> <p>Residential Treatment Center Placement^b <u>Total sample:</u> $G1 > G2$, $p=0.04$, OR=0.29 [95% CI, 0.09 to 0.98]</p> <p><u>Foster care:</u> $G1 > G2$, $p=0.03$, OR=0.18 [95% CI, 0.03 to 0.96]</p>	<p>Permanency Attained^b <u>Total sample</u> No difference between G1 and G2, $p=0.17$</p> <p><u>Foster care</u> $G1 > G2$, $p=0.005$, OR=5.14 [95% CI, 1.55 to 17.07]</p> <p>Type of Permanency Outcome^b <u>Reunification among youth without termination of parental rights</u> $G1 > G2$, $p<0.05^a$</p> <p><u>Reunification among youth in foster care:</u> $G1 > G2$, $p=0.03^a$</p>

^aThe authors report only p value and not odd ratios for these outcomes.

^b **intention-to-treat (ITT) analysis**

Note: Greater comparative benefit is denoted in the results tables using a greater (“>”) sign.

Abbreviations: CI = confidence interval; G = group; OR = odds ratio.

Although this study was rated as low risk of bias and provided precise outcome estimates, we graded the SOE for the FHF intervention as low for child welfare outcomes due to the presence of a single study (Table 84).

Table 84. Detailed strength of evidence grading table: Fostering healthy futures

Intervention and Comparator	Outcome	Studies; subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of effect
Fostering Healthy Futures vs. inactive control	Placement stability	1; ¹³² 110	L	Unknown, single study	Direct	Precise	Low OR=0.18 to 0.56
	Permanency	1; ¹³² 110	L	Unknown, single study	Direct	Precise	Low OR=5.14

Note: All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis.

Abbreviations: L = low; OR = odds ratio; SOE = strength of evidence.

Middle School Success

We identified one RCT (one article) comparing Middle School Success with routine foster care (Table 85).¹³⁶ This RCT also reported outcomes relevant to KQ 1 (see previous section of Results chapter). The study reports placement changes at two follow-up timepoints among girls age 10 to 12 in foster care.

Table 85. Middle school success: Study characteristics

First Author et al., Year	Sample Description (Age Group)	Study Design and Duration ^a	Comparison Groups	Baseline N	Risk of Bias
Kim & Leve 2011 ¹³⁶	Girls in foster care (ages 10-12 years)	RCT T1: Followup 6 months postbaseline ^a T2: 12 months postbaseline	G1: MSS G2: RFC	G1: 48 G2: 52 Overall N = 100	Low

^aIn the paper, the authors define timepoints as baseline (T1) and followup at 6 months (T2), 12 months (T3), 24 months (T4), and 36 months (T5) postbaseline. We include only the followup timepoints for which KQ 2 outcome data are reported in the paper and renumbered the timepoints accordingly.

Abbreviations: G = group; MSS = Middle School Success; N = number; RCT = randomized controlled trial; RFC = regular foster care control group.

Key Points

- **Placement stability:** Compared with usual care, participants in the Middle School Success intervention experienced significantly fewer placement changes compared with youth in routine foster care (low SOE of benefit).¹³⁶

Detailed Synthesis

Table 86 presents the results of the Middle School Success trial reporting outcomes relevant to KQ 2;¹³⁶ additional study details are provided in the evidence tables (Appendix E). The authors examined whether girls in the intervention experienced fewer placement changes based on data from child welfare system records collected from baseline through 12-month followup. The study found a significant group difference at both the 6- and 12-month follow-up timepoints in favor of the intervention.

Table 86. Results: Middle school success

First Author et al., Year	Comparison Groups	Mental Health Outcomes
Kim & Leve, 2011 ¹³⁶	G1: MSS G2: RFC	Placement Changes ^a T1, T2: G1 > G2, p=0.02, d=0.50

^a intention-to-treat (ITT) analysis

Note: Greater comparative benefit is denoted using a greater (“>”) sign. Cohen’s *d* effect size index of the difference between groups means: 0.20 = small; 0.50 = medium; 0.80 = large.¹⁷⁶

Abbreviations: G = group; MSS = Middle School Success; RFC = regular foster care control group; T = time.

Although this study was rated as low risk of bias and provided precise outcome estimates, we graded the SOE for the Middle School Success intervention as low for child welfare outcomes due to the presence of a single study (Table 87).

Table 87. Detailed strength of evidence grading table: Middle school success

Intervention and Comparator	Outcome	Studies; subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of Effect
Middle School Success vs. routine foster care	Placement stability	1, ¹³⁶ 100	L	Unknown, single study	Direct	Precise	Low, medium (d=0.50)

Note: All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as: Cohen’s *d* = 0.20, 0.50, and 0.80.¹⁷⁶

Abbreviations: L = low; SOE = strength of evidence.

Multidimensional Treatment Foster Care for Preschoolers

We identified one RCT comparing the effectiveness of Multidimensional Treatment Foster Care for Preschoolers (MTFC-P) with usual care for improving child welfare outcomes (Table 88).^{140,143,144} This RCT also reported outcomes relevant to KQ 1 (see previous section of Results chapter).

Table 88. Multidimensional treatment foster care for preschoolers: Study characteristics

First Author et al., Year	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Fisher et al., 2005 ¹⁴³ and Fisher et al. 2009; ¹⁴⁰	Children ages 3 to 6 years in new foster placement, expected duration ≥3 months	RCT 24 months ^a (postbaseline: initial out-of-home placement)	G1: MTFC-P G2 Usual care	G1: 47 G2: 43 Overall N = 90 ^b	Medium
United States					

^aOut-of-home placements were typically prior to study.

^bFisher et al., 2009 G1 N=29, G2 N=23

Abbreviations: G = group; MTFC-P = Multidimensional Treatment Foster Care for Preschoolers; N = number; RCT = randomized controlled trial.

Key Points

- **Permanency:** Compared with usual care, MTFC-P resulted in increased attempted placements, a greater proportion of attempts resulting in permanent placements, and a greater number of cases resulting in permanent placements compared with children in usual care (low SOE).^{140,143}

Detailed Synthesis

Results of the MTFC-P trial span seven articles drawn from the same sample, two of which address child welfare outcomes (Table 89);^{140,143,144} additional study details are provided in the evidence tables (Appendix E).

Table 89. Results: Multidimensional treatment foster care for preschoolers versus usual care

First Author et al., Year	Comparison Groups	Placement Stability	Permanency
Fisher et al., 2005 ¹⁴³	G1: MTFC-P G2: Usual care	NA	Fewer Permanent Placement Failures (after closed CPS case) G1>G2: p=0.02
Fisher et al., 2009 ¹⁴⁰	G1: MTFC-P G2: Usual care	NA	Proportion with Attempt at Permanent Placement No difference between G1 and G2, p>0.05 Proportion of Attempts Resulting in Successful Placement G1>G2, p<0.01 Proportion of Cases Resulting in Permanent Placement (i.e., no further placement change) G1>G2, p<0.01

Note: Greater comparative benefit is denoted in the results tables using a greater (“>”) sign.

Abbreviations: CPS = Child Protective Services; G = group; MTFC-P = Multidimensional Treatment Foster Care for Preschoolers; NA = not applicable.

Fisher et al.¹⁴³ provided an early analysis of placement stability. The sample consisted of 90 of the 117 children in the final study sample (47 MTFC-P; 43 usual care). Children receiving MTFC-P experienced significantly fewer failed permanent placement attempts relative to those in usual care; that is, children receiving MTFC-P were less likely to return to CPS care after placement and case closure. Usual care children had similar rates of placement failure during their initial 10 months of care, after which their rates diverged significantly in favor of the MTFC-P children.

Another article by Fisher and colleagues provides further evidence for the efficacy of the MTFC-P approach in improving positive permanency outcomes.¹⁴⁰ Permanent placements were attempted at equal rates for each group; however, for MTFC-P children, these attempts were more likely to be sustained on the first placement attempt and without further CPS involvement. Additionally, a larger proportion of children in the MTFC-P group remained in their permanent placement and required no further CPS involvement relative to usual care children.

We graded the SOE as low for child welfare outcomes due to the presence of a single study (Table 90).

Table 2. Detailed strength of evidence grading table: Multidimensional treatment foster care for preschoolers

Intervention and Comparator	Outcome	Studies; Subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of Effect
MTFC-P vs. usual care	Permanency	1 ^{140,143} , 90	M	Unknown, single study	Direct	Precise	Low; NR

Note: All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis.

Abbreviations: M = medium; NR = not reported; SOE = strength of evidence

New Orleans Intervention

We identified one nonconcurrent cohort study examining the efficacy of a comprehensive, multimodal, individualized intervention for infants and toddlers in foster care, referred to as the New Orleans Intervention, compared with usual care (Table 91).¹³⁰ The intervention is a partnership between the child welfare agency and a team of university-based experts in infant mental health to address the developmental and mental health needs of young children in foster care for abuse or neglect in New Orleans, Louisiana. Children adjudicated between 1991 and 1994, before the intervention was implemented, were the comparison group; children adjudicated between 1995 and 1998, after the intervention was implemented, comprised the intervention group. A comparison group of children in foster care adjudicated between 1995 and 1998 who were supposed to receive the intervention but instead received usual care were also included in a subset of the analyses as a nonintervention group. The authors examined child and maternal recidivism, length of time in foster care, and types of permanency outcomes (e.g., reunification, termination of parental rights, surrender, and relative placement).

Table 91. New Orleans intervention: Study characteristics

First Author et al., Year	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Zeanah et al., 2001 ¹³⁰ United States	Adjudicated children <48 months of age	Nonconcurrent cohort study [pre-intervention implementation cohort (1/1/1994-12/31/1994) and postintervention implementation cohorts (1/1/1995-12/31/1998)] 1-4 years ^a	G1: New Orleans Intervention group G2: Comparison group (usual care) G3: Nonintervention group (children who were eligible but did not receive the intervention)	G1: 145 G2: 95 G3: 25 Overall = 265 Children returned to birth parents & relatives: G1: 45 G2: 98 Subgroup overall = 143 Children returned to birth parents: G1: 33 G2: 71 Subgroup overall = 104 Mothers whose parental rights were terminated: G1: 38 G2: 19 Subgroup overall = 57	Medium

^aDuration depended on when child entered foster care: 4-year period for children entering care in 1991 and in 1995; 3-year period for those entering care in 1992 and 1996, 2-year period for those entering care in 1993 and 1997, and 1-year period for those entering care in 1994 and 1998.

Abbreviation: G = group.

Key Points

- **Safety.** Compared with children in usual foster care, participants in the New Orleans Intervention had significant reductions in child and maternal recidivism; additionally, the intervention showed a trend towards reduced risk of maternal recidivism with another child (low SOE).¹³⁰
- **Permanency.** Participation in the New Orleans Intervention resulted in increased termination of parental rights and decreased reunification outcomes compared with children in usual foster care (low SOE).¹³⁰

Detailed Synthesis

The authors provide evidence for the efficacy of the New Orleans model in reducing the risk of subsequent validated incidents of maltreatment (child recidivism) comparing the intervention with the comparison and nonintervention groups (Table 92). The intervention group also experienced fewer adjudicated subsequent incidents, a more stringent maltreatment recurrence outcome, compared with the preintervention cohort. The authors report that all of the documented cases of recidivism in the intervention group occurred in children returned to their birth parents or placed with relatives. However, analysis of the subgroup of children who had been returned to birth parents or placed with relatives did not demonstrate significant differences for either validated or adjudicated subsequent maltreatment between the intervention and comparison groups. Further subgroup analysis of only children returned to birth parents again found no statistically significant difference between the intervention and comparison group for either validated or adjudicated subsequent maltreatment. The authors report a trend toward significance comparing the intervention and comparison group on maternal recidivism, again either validated or adjudicated. Similarly, a trend was found comparing the intervention and nonintervention group on maternal recidivism for validated maltreatment. Subgroup analysis of maternal recidivism among mothers whose parental rights were terminated demonstrated a trend toward significance when comparing the intervention and comparison group on subsequent validated maltreatment incidents and a significant reduction in adjudicated maltreatment.

Table 92. Results: New Orleans intervention versus comparison groups

First Author et al., Year	Comparison Groups	Safety	Permanency
Zeanah et al., 2001 ¹³⁰	G1: New Orleans intervention group G2: Comparison group (usual care) G3: Nonintervention group (usual care)	<p>Child Recidivism^a Validated as maltreated in subsequent incident: G1 > G2, $p = 0.022$; RRR=0.68 [95% CI, 0.09 to 0.89]^b G1 > G3, $p = 0.036$; RRR=0.74 (95% CI, 0.02 to 0.93)^b</p> <p>Adjudicated in subsequent incident: G1 > G2, $p = 0.036$; RRR=0.67 (95% CI, -0.11 to 0.90)^b G1 > G3, $p = 0.072$, trend</p> <p>Child Recidivism subgroup: only children returned to birth parents or placed with relatives^a Validated: No difference between G1 and G2, $p = 0.114$ G1 and G3, $p = \text{NR}$</p> <p>Adjudicated: No difference between G1 and G2, $p = 0.193$ G1 and G3, $p = \text{NR}$</p> <p>Child Recidivism subgroup: only children returned to birth parents^a Validated: No difference between G1 and G2, $p = 0.126$ G1 and G3, $p = \text{NR}$</p>	<p>Length of Time in Foster Care: No difference between G1 and G2, $p = \text{ns}$ (NR)</p> <p>Difference in Permanency Outcomes: Reunification, Termination, Surrender, and Relative Placement G1 < G2, $p < .01$ Note: this result is a negative outcome for the intervention group with twice as many terminations and significantly fewer reunifications. G1 and G3, $p = \text{NR}$</p>

Table 92. Results: New Orleans intervention versus comparison groups (continued)

First Author et al., Year	Comparison Groups	Safety	Permanency
Zeanah et al., 2001 ¹³⁰ (continued)		<p>Adjudicated: No difference between G1 and G2, p = 0.175 G1 and G3, p = NR</p> <p>Maternal Recidivism^a Validated for subsequent child: G1 > G2, p = 0.055, trend G1 > G3, p = 0.060, trend</p> <p>Adjudicated for subsequent child: G1 > G2, p = 0.091, trend G1 > G3, p = 0.10</p> <p>Maternal Recidivism subgroup: mothers whose parental rights were terminated^a Validated for subsequent child: G1 > G2, p = 0.051, trend No difference between G1 and G3, p = NR</p> <p>Adjudicated for subsequent child: G1 > G2, p = 0.022; RRR=0.75 (95% CI, 0.11 to 0.93)^b</p> <p>No difference between G1 and G3: p = NR</p>	

^aFor the recidivism data, the study authors provided relative risk reduction (RRR) statistics without noting the statistical significance of the findings; the Evidence-based Practice Center (EPC) research team performed Mantel-Haenszel chi square analyses to assess the significance of the between-group results and calculated confidence intervals for the RRR statistics.

^bPoint estimates are provided in the evidence tables (Appendix E).

Note: Greater comparative benefit is denoted in the results tables using a greater (“>”) sign.

Abbreviations: CI = confidence interval; G = group; N = number; NR = not reported; RRR = relative risk reduction.

No differences were found between the intervention and comparison group for length of time in foster care. The authors attribute this no-difference finding in part to legal and child welfare system processes and the tendency of the court to grant continuances to give the parent more time and opportunity to prove their fitness to regain custody. The study also found that parents who participated in the intervention group were twice as likely to lose custody (termination of parental rights) and significantly less likely to be reunified with their children compared with the cohort that did not receive the intervention. The authors suggest that the “more intense scrutiny of parents...with its focus on psychological accountability” may have resulted in this increase and acknowledge that the decreased rates of recidivism in the intervention group may have been in part attributable to the termination of parental rights. Parents gaining insight about the needs of their child for a safe, stable, and nurturing environment may mobilize them to appraise realistically their parental capacity and opt for termination of parental rights, which frees the child to be adopted or reach permanency through the guardianship of a relative. Thus, the finding of increased termination of parental rights and decreased reunification can be interpreted as a clinically positive outcome.

We graded the SOE for the New Orleans Intervention as low for child welfare outcomes based on the presence of a single study (Table 93).

Table 93. Detailed strength of evidence grading table: New Orleans intervention

Intervention and Comparator	Outcome	Studies; subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of effect
New Orleans Intervention vs. Usual care	Safety	1 ¹³⁰ ; 255	M	Unknown, single study	Direct	Precise	Low; RRR=0.67 to 0.75
	Permanency	1 ¹³⁰ ; 240	M	Unknown, single study	Direct	Precise	Low, G1 < G2; NR

Note: For estimation of the magnitude of effect, we include only the statistically significant ($p < 0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Authors do not report effect sizes for the some of the outcomes presented in this table.

Abbreviations: G = group; M = medium; NR = not reported; RRR = relative risk reduction; SOE = strength of evidence.

Enhanced Foster Care, Summary Strength of Evidence Grades

We summarize the SOE grade for all enhanced foster care in Table 94.

Table 94. Enhanced foster care: Summary strength of evidence for child welfare outcomes

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence Magnitude of Effect
Fostering Healthy Futures	Inactive control	Placement stability	1 ¹³² ; 110	Low; OR=0.18 to 0.56
		Permanency	1 ¹³² ; 110	Low; OR=5.14
Middle School Success	Routine foster care	Placement stability	1 ¹³⁶ ; 100	Low; medium ($d=0.50$)
Multi-dimensional Treatment Foster Care	Usual care	Permanency	1 ^{140,143} ; 90	Low; NR
New Orleans Intervention	Usual care	Safety	1 ¹³⁰ ; 255	Low; RRR=0.67 to 0.75
		Permanency	1 ¹³⁰ ; 240	Low (G1<G2); NR

Note: All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant ($p < 0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as: Cohen's $d = 0.20$, 0.50 , and 0.80 .¹⁷⁶

Abbreviations: G = group; NR = not reported; OR = odds ratio; RRR = relative risk reduction.

Key Question 3. Comparative Effectiveness of Interventions with Different Characteristics

Organization

The Results in this section are organized according to type of intervention characteristic assessed for key question (KQ) 3. Following the description of included studies, we present the key points which summarize the main findings for each comparison and the strength of evidence (SOE) grade. The trials included in this section were all included in KQ 1, so they are very briefly summarized here and the reader is referred to previous sections of the Results chapter for detail about study design and findings.

Description of Included Studies

Several treatment characteristics were identified a priori for this KQ, based on factors of interest identified in the mental health services and intervention research literature. These characteristics were modality (i.e., format, such as individual vs. dyadic), theoretical orientation, and type of service delivery setting. We did not identify any eligible studies that compared an

intervention's effectiveness across different type(s) of setting. Regarding modality and theoretical orientation, very few studies were aligned with this KQ and our team was cautious to avoid overinterpretation so as to make a study "fit" the question. Our intention in selecting theoretical orientation as an intervention characteristic to examine in KQ 3 was to contribute to the literature on (and ongoing debate regarding) active ingredients in efficacious interventions. However, because the majority of interventions included in this review drew on multiple theoretical underpinnings and did not espouse a unifying or overarching theoretical orientation, the results of comparisons did not lend themselves to interpretation. Additionally, many studies did not provide clear, specific detail regarding the theoretical orientation(s) of the comparative approach. Thus, we identified only three trials that provided meaningful comparisons for inclusion in KQ 3 (Table 95).^{77-79,81-83,85,108}

Table 95. Number of trials and articles comparing the effectiveness of interventions with different characteristics

Intervention Characteristic	Comparison	Intervention	Trials
Theoretical Orientation	Attachment-based vs. didactic	Attachment and Biobehavioral Catch-up ^{77-79,81-83,85}	2 ^a
	Cognitive behavioral vs. psychodynamic	Trauma-Focused Cognitive Behavioral Therapy ¹⁰⁸	1
		Total	3

^aReported in seven articles

Below we provide an overview of the key features in the body of evidence for theoretical orientation.

- Three trials provided two comparisons of interventions by theoretical orientation. Two trials focused on an attachment-based intervention;^{77-79,81-83,85} one trial focused on a cognitive-behavioral approach.¹⁰⁸
- One trial targeted foster parents and the young children in their care;^{77-79,85} two trials focused on biological parents.^{81-83,108}
- One comparison (two trials) compared an intervention based on attachment theory with a didactic approach that emphasized teaching parents how to support their children's language and cognitive development (derived comparator).^{77-79,81-83,85,108}
- One trial examined the comparative efficacy of a cognitive-behavioral intervention relative to a conventional psychodynamic approach.¹⁰⁸
- Two trials reported on mental and behavioral health outcomes.^{77,78,82,83,108}
- All three trials reported on caregiver-child relationship outcomes.^{79,81,108}
- One trial assessed developmental outcomes.⁸⁵
- No trials assessed school-based functioning outcomes.
- No trials assessed child welfare outcomes.

Theoretical Orientation

Key Points

- **Attachment-based versus didactic**
 - *Mental health and behavioral outcomes:* Children whose foster or biological parents participated in the attachment-based intervention had better mental and behavioral

- health outcomes than children whose foster parents participated in the didactic intervention (low SOE of benefit).^{77,78,82,83}
- *Healthy caregiver-child relationship*: Parents (foster or biological) who participated in the attachment-based intervention reported significantly more positive caregiver-child relationship outcomes compared with parents who participated in the didactic comparator (low SOE of benefit).^{79,81}
 - *Healthy development*: Children whose foster parents participated in the attachment-based intervention exhibited higher levels of cognitive functioning compared with children in the didactic condition.⁸⁵
 - **Cognitive behavioral versus psychodynamic**
 - *Mental health and behavioral outcomes*: Children participating in the cognitive-behavioral approach reported better mental health outcomes compared with participants in the psychodynamic condition (low SOE).¹⁰⁸
 - *Healthy caregiver-child relationship*: Children and caregivers participating in the cognitive-behavioral approach reported better caregiver-child relationship outcomes than participants in the psychodynamic condition (low SOE).¹⁰⁸

Detailed Synthesis

We identified three trials that compared interventions' effectiveness by theoretical orientation. We note these studies in Table 96 but do not discuss them here, as they are discussed in previous sections of the Results chapter.

Table 96. Theoretical orientations: Strength of evidence for KQ 1 outcomes

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence ^a Magnitude of Effect ^b
Attachment-based	Didactic	Mental and behavioral health	2 ^{77,78,82,83} ; 153	Low; NR
		Healthy caregiver-child relationship	1 ^{79,81} ; 46	Low; NR
Cognitive behavioral	Psycho-dynamic	Mental and behavioral health	1 ¹⁰⁸ ; 229	Low; Small to medium (d=0.33 to 0.70)
		Healthy caregiver-child relationship	1 ¹⁰⁸ ; 229	Low; Small to medium (d=0.38 to 0.57)

^aAll strength of evidence results are G1>G2 unless noted otherwise.

^bFor estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen's $d = 0.20$, 0.50 , and 0.80 .¹⁷⁶ We include an effect size range when more than two effect sizes are reported. Authors did not report effect sizes for some measures.

Abbreviations: G = group; KQ = key question; N = numbers; NR = Not Reported

Key Question 4. Comparison of Intervention Effectiveness for Improving Child Well-Being or Child Welfare Outcomes in Population Subgroups

Organization

We organize the results for key question (KQ) 4 by overarching category of child or caregiver subgroup population. Each section provides a brief overview of the included studies, the key points, and a summary strength of evidence (SOE) table for the different subgroups. Because all studies included in this section are also included in either or both KQ 1 and KQ 2,

the reader is referred to previous sections for detail about the study design and findings. Also in the interest of reducing repetition, we do not repeat findings with insufficient SOE in KQ 4.

Below we list the subgroups that were specified a priori for consideration in KQ 4:

- KQ 4a. Child subgroups:
 - Age and other sociodemographic subgroups (e.g., race, ethnicity, sex)
 - Type of maltreatment exposure (e.g., neglect, physical abuse, sexual abuse)
 - Severity of maltreatment exposure
 - Presence of mental or behavioral health problems or other special needs
- KQ 4b. Caregiver subgroups:
 - Primary caregiving context: biological parent; foster, kin (relative), or adoptive caregivers; residential program or group home
 - Presence of mental health problems, substance abuse, or domestic violence
 - Sociodemographic groups (e.g., age, race, ethnicity, sex)

Description of Included Studies

We identified 23 trials which addressed the subgroups specified for KQ 4. As noted above, all trials included in this section also were included in either or both KQ 1 and KQ 2 and all three intervention types (parenting interventions, trauma-focused treatments, and enhanced foster care interventions) are represented in the results for KQ 4. Table 97 presents the number of trials and articles for each child and caregiver subgroup; the table also describes which intervention was evaluated with the different subpopulations of interest to this KQ. For the age subgroup, we included those studies that limited the population to children whose ages fell within the following developmental periods: early childhood (ages 0 to 5), middle childhood (ages 6 to 10), and early adolescence (ages 11 to 14). So as not to be too restrictive, we allowed the age parameters to vary by 1 year. Hence, studies with populations that spanned wide age ranges (e.g., 3 to 8 years, 6 to 14 years) were not eligible for inclusion in KQ 4 age subgroup analyses.

Regarding severity, we operationalized this population characteristic in terms of the chronic and multiple nature of the child's exposure. Although several studies characterized the study population as "severely maltreated" or described families as having multiple reports to Child Protective Services (CPS) or severe parent-to-child violence, further breakdown of the population by severity or analysis of outcomes by degree of severity was not provided.^{80,95} In general, reporting of the degree of maltreatment exposure was notably limited in the literature reviewed, a function of researchers having to rely on child welfare or other administrative records and/or parent report (both of which can be difficult to obtain and are subject to inaccuracies and omission) for information about the child's maltreatment history.

Regarding caregiving context, we did not identify eligible trials focused on adoptive parents, either already related or not previously related to the child. We also did not identify eligible trials addressing residential or group care, caregivers with mental health or substance abuse problems, or caregiver sociodemographics (e.g., age, sex, race, ethnicity).

Table 97. Total number of studies (trials and cohort studies) in KQ 4

Intervention	Trials	Early childhood	Middle childhood	Early adolescence	Female	Neglect	Physical Abuse	Sexual Abuse	Trauma Symptoms	Biological parent	Foster caregiver
<i>Parenting Interventions</i>	<i>Total = 10</i>	7	1	-	-	1	1	-	-	7	3
Attachment and Biobehavioral Catch-up	3	3	-	-	-	-	-	-	-	1	2
Attachment-based Intervention	1	1	-	-	-	-	-	-	-	1	-
Child-Parent Psychotherapy	2	2	-	-	-	-	-	-	-	2	-
Keeping Foster and Kinship Parents Trained and Supported	1	-	-	-	-	-	-	-	-	-	1
Parent-Child Interaction Therapy Adaptation Package	2	-	-	-	-	-	1	-	-	2	-
SafeCare	1	1	-	-	-	1	-	-	-	1	-
<i>Trauma-Focused Treatments</i>	<i>Total = 5</i>	-	-	-	2	-	1	4	5	1	0
Combined Parent-Child Cognitive Behavioral Therapy	1	-	-	-	-	-	1	-	1	1	-
Group Psychotherapy for Sexually Abused Girls	1	-	-	-	1	-	-	1	1	-	-
Group Treatment Program for Sexual Abuse	1	-	-	-	1	-	-	1	1	-	-
Trauma-Focused Cognitive Behavioral Therapy	2	-	-	-	-	-	-	2	2	-	-
<i>Enhanced Foster Care Interventions</i>	<i>Total = 5</i>	3	1	1	1	1	-	-	-	1	3
Bucharest Early Intervention Project	1	1	-	-	1	1	-	-	-	-	1
Fostering Healthy Futures	1	-	1	-	-	-	-	-	-	-	-
Middle School Success	1	-	-	1	-	-	-	-	-	-	1
Multidimensional Treatment Foster Care-Preschoolers	1	1	-	-	-	-	-	-	-	-	1
New Orleans Intervention	1 ^a	1	-	-	-	-	-	-	-	1	-
TOTAL	20	10	2	1	3	2	2	4	5	9	6

^a Cohort study

Abbreviation: KQ = key question.

KQ 4a. Child Well-Being and Child Welfare Outcomes in Child Subgroups

Age and Other Sociodemographic Subgroups: Early Childhood

Key Points

- *Attachment and Biobehavioral Catch-up (ABC)*: In one trial targeting infants and toddlers (approximately 3 to 39 months of age) and their foster caregivers, ABC resulted in improvements in child mental and behavioral health and caregiver-child relationship outcomes compared with an active control (low SOE for benefit).⁷⁷⁻⁷⁹ In a second trial targeting infants and toddlers (approximately 2 to 21 months of age) and their maltreating parents, ABC again resulted in improvements in child mental and behavioral health and caregiver-child relationship outcomes compared with the active control used in the previous trial (low SOE for benefit).⁸¹⁻⁸³ A third trial conducted with children in foster care age 0 to 6 years and their foster caregivers, found significant benefit for ABC in improving child mental and behavioral health and caregiver-child relationship outcomes compared with a wait-list control (low SOE of benefit).⁸⁰
- *Attachment-based Intervention*: A randomized controlled trial (RCT) targeting infants and toddlers (approximately 1 to 6 years) evaluating an intervention loosely based on ABC and other attachment-focused approaches found improved caregiver-child relationship outcomes in the intervention arm compared with usual care (low SOE of benefit).⁸⁶
- *Bucharest Early Intervention Project (BEIP)*: The BEIP trial demonstrated numerous benefits for infants and toddlers (age 6 to 30 months) removed from institutionalized care and placed in an enhanced foster care intervention compared with children who remained in institutional care. The intervention showed benefit in numerous long-term child mental and behavioral health, caregiver-child relationship, and developmental outcomes. Analysis by age of placement in foster care showed that children placed in foster care earlier were significantly more likely to have an organized attachment compared with children placed later. For secure versus insecure attachment, children in the enhanced foster care placement before 24 months of age were more likely to have secure attachment than those placed in the foster care condition after 24 months. Time in foster care was also significant, with children being placed for a longer time in the enhanced foster care more likely to have an organized attachment than those placed for a shorter time (low SOE of benefit).¹¹⁷⁻¹²⁹
- *Child-Parent Psychotherapy (CPP)*: In two RCTs targeting young children and their maltreating parent (one study targeted 12-month-old infants; the second study targeted 4-year-old children), a variant of Child-Parent Psychotherapy developed by Cicchetti and colleagues resulted in improved caregiver-child relationship outcomes compared with usual care (low SOE of benefit).^{87,88}
- *Multidimensional Treatment Foster Care*: One RCT with young children (3 to 6 years) found significant benefit of a highly individualized multimodal intervention in improving child mental and behavioral health, caregiver-child relationship, healthy development, and positive permanency outcomes (low SOE of benefit).^{138-144,179}
- *New Orleans Intervention*: One nonconcurrent cohort study examined a multimodal intervention that included intensive dyadic psychotherapy with adjudicated (i.e., placed in

foster care) infants and young children (age 0 to 4 years) and their biological parents. Referred to as the New Orleans Intervention, this study found significantly reduced risk of child recidivism compared with usual care and also with a comparison group of children who were eligible but did not receive the intervention. In addition, the study found that the intervention, compared with usual care, resulted in increased termination of parental rights, decreased reunification, and reduced risk of maternal recidivism with a subsequent child among mothers whose rights had been terminated (low SOE of benefit).¹³⁰

- *SafeCare*: In one large-scale effectiveness RCT examining a home-visiting intervention for parents involved with CPS due to neglect, SafeCare resulted in significantly reduced child recidivism (rereports to child welfare) compared with usual care; the benefits of SafeCare were strongest for preschool-age children compared with the full study population, which included children up to 12 years of age (moderate SOE of benefit).¹⁰⁰

Detailed Synthesis

We summarize the outcomes and SOE for each study in Table 98. We do not present a detailed synthesis section because all studies are discussed in previous sections of the Results chapter.

Table 98. Strength of evidence summary table: Early childhood

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence; Magnitude of Effect
Attachment and Biobehavioral Catch-up	Active control ^a	Mental health and behavior	2 ^{77,78,82,83} ; 213	Low; NR
		Healthy caregiver-child relationship	2 ^{79,81} ; 166	Low; NR
		Healthy development	1 ⁸⁵ ; 37	Low; NR
	Wait list	Mental and behavioral health	1 ⁸⁰ ; 58	Low; medium (partial eta squared=0.436 or 0.511)
		Healthy caregiver-child relationship	1 ⁸⁰ ; 58	Low; medium or large (partial eta squared=0.59 or 0.791)
Attachment-based Intervention	Usual care	Healthy caregiver-child relationship	1 ⁸⁶ ; 79	Low; small to medium (d=0.47, r=0.36 or 0.37)
Child-Parent Psychotherapy ^b	Usual Care	Healthy caregiver-child relationship	2 ^{87,88} ; 141	Low; medium to large (h=0.64 to 1.34)
Bucharest Early Intervention Project	Usual care (institutional care in Romania)	Mental health and behavior	1 ^{118,120,123,125,129} ; 136	Low; odds ratio 2.8 [95%CI 1.2 to 6.4]
		Healthy caregiver-child relationship	1 ^{121,125,127} ; 136	Low; NR
		Healthy development	1 ^{117,119,121,122,124,126,128} ; 136	Low; effect size ^c =0.47 or 0.62
Multi-dimensional Treatment Foster Care for Preschoolers	Usual care	Mental health and behavior	1 ^{142,179} ; 117	Low; medium (d=0.64 to 0.68)
		Healthy caregiver-child relationship	1 ^{139,141} ; 117	Low; NR
		Healthy development	1 ¹³⁸ ; 23	Low; NR
		Permanency	1 ^{79,143} ; 90	Low; NR
New Orleans Intervention	Usual care	Safety	1 ¹³⁰ ; 255	Low RRR=0.67 to 0.75
		Permanency	1 ¹³⁰ ; 240	Low; NR

Table 98. Strength of evidence summary table: Early childhood (continued)

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence; Magnitude of Effect
SafeCare	Usual care	Safety	1 ¹⁰⁰ ; 1653	Moderate HR=0.74 to 0.79

^aActive comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

^bIntervention is a variant of relationship-based dyadic psychotherapy as developed and manualized by Cicchetti and colleagues.^{87,88}

^cEffect size measure is not specified, so we did not classify the magnitude of effect as small, medium, or large.

Note: Table is organized alphabetically by intervention name. All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as: Cohen's $d = 0.20, 0.50$, and 0.80 ; Cohen's $h = 0.20, 0.50$, and 0.80 ; and correlation coefficient $r = 0.10, 0.30$, and 0.50 .¹⁷⁶ When authors use partial eta squared effect sizes we use the interpretation that the authors provide.⁸⁰ We include an effect size range when more than two effect sizes are reported.

Abbreviations: G = group; HR = hazard ratio; N = number; NR = not reported; RRR = relative risk reduction.

Age and Other Sociodemographic Subgroups: Middle Childhood

Key Points

- *Fostering Healthy Futures(FHF)*: One RCT found that youth age 9 to 11 years who participated in the FHF intervention experienced significantly greater improvements in mental health outcomes, had greater placement stability, were less likely to be placed in residential treatment care, and were more likely to be reunified than youth in an inactive control group; participants in FHF who were in nonrelative foster care were more likely to attain permanency compared with the control group (low SOE of benefit).¹³²

Detailed Synthesis

We summarize the outcomes and SOE for each study in Table 99. We do not present a detailed synthesis section because all studies are discussed in previous sections of the Results chapter.

Table 99. Strength of evidence summary table: Middle childhood

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence; Magnitude of Effect
Fostering Healthy Futures	Inactive control	Mental and behavioral health	1 ¹³¹ ; 156	Low; small to medium ($d=0.30$ to 0.51)

Note: Table is organized alphabetically by intervention name. All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen's $d = 0.20, 0.50$, and 0.80 .¹⁷⁶

Abbreviations: G = group; N = number.

Age and Other Sociodemographic Subgroups: Early Adolescence

Key Points

- *Middle School Success*: One RCT found that youth age 10 to 12 years who participated in the Middle School Success intervention experienced significantly greater improvements in mental and behavioral health outcomes and greater placement stability compared with routine foster care (low SOE of benefit).^{136,137}

Detailed Synthesis

We summarize the outcomes and SOE for each study in Table 100. We do not present a detailed synthesis section because all studies are discussed in previous sections of the Results chapter.

Table 100. Strength of evidence summary table: Early adolescence

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence; Magnitude of Effect
Middle School Success	Usual care	Mental and behavioral health	1 ^{136,137} ; 100	Low; small to medium (d=0.35 to 0.57)
		Placement stability	1 ¹³⁶ ; 100	Low; medium (d=0.50)

Note: Table is organized alphabetically by intervention name. All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen's d = 0.20, 0.50, and 0.80.¹⁷⁶

Abbreviations: G = group; N = number.

Age and Other Sociodemographic Subgroups: Sex

Key Points

- *Bucharest Early Intervention Project (BEIP):* The BEIP trial conducted subgroup analyses by sex. The study found that girls were more likely to have healthy caregiver-child relationship (attachment) outcomes than boys. Additionally, girls in the BEIP condition were more likely than their counterparts remaining in institutional care to have secure attachment and change from an insecure/incompletely formed to secure attachment; however, the study found no differences by intervention group among males (low SOE of benefit).^{125,127}
- *Group Psychotherapy for Sexually Abused Girls:* One RCT evaluating a group psychotherapy intervention explicitly developed for girls found superior long-term benefits in child mental and behavioral health outcomes compared with conventional psychoanalytic therapy; this comparative benefit was sustained at a 2-year postbaseline followup (low SOE of benefit).¹¹³
- *Group Treatment Program for Sexual Abuse:* One nonrandomized study evaluating a group treatment program with a sample comprising only girls found significant benefit in favor of the intervention for improving mental and behavioral health outcomes compared with wait-list control; the findings must be interpreted with caution in light of the nonrandomized design and very small sample size (low SOE of benefit).¹¹⁴

Detailed Synthesis

We summarize the outcomes and SOE for each study that was completed within a subgroup in Table 101. We do not present a detailed synthesis section because all studies are discussed in previous sections of the Results chapter.

Table 101. Strength of evidence summary table: Sex (females)

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence; Magnitude of Effect
Group Psychotherapy	Active control ^a	Mental and behavioral health	1, ¹¹³ 71	Low, G1<G2 Small to medium (d=0.36 to 0.79)
Group Treatment Program for Sexual Abuse	Inactive control	Mental and behavioral health	1, ¹¹⁴ 30	Low; NR

^a Active comparator is an approach representative of a conventional practice in the field.

NOTE: Table is organized alphabetically by intervention name. All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen's *d* = 0.20, 0.50, and 0.80.¹⁷⁶

Abbreviations: G = group; N = number; NR = not reported.

Type of Maltreatment Exposure: Neglect

Key Points

- *Bucharest Early Intervention Project (BEIP)*: One RCT evaluated an enhanced foster care intervention with infants and young children exposed to social and developmental deprivation in institutional care. The BEIP trial resulted in superior improvements in child mental and behavioral health, caregiver-child relationship, and developmental outcomes compared with usual (institutional) care (low SOE of benefit).¹¹⁷⁻¹²⁹
- *SafeCare*: One large-scale effectiveness RCT evaluated SafeCare, an intervention designed for parents involved with CPS due to neglect. The intervention resulted in significantly reduced child recidivism (rereports to child welfare) compared with usual care. More than a third of the children in each study group had previous histories of physical abuse and of sexual abuse. As noted previously, the benefits of SafeCare were strongest for preschool-age children compared with the full study population, which included children up to 12 years of age (moderate SOE of benefit).¹⁰⁰

Detailed Synthesis

We summarize the outcomes and SOE for each study in Table 102. We do not present a detailed synthesis section because all studies are discussed in previous sections of the Results chapter.

Table 102. Strength of evidence summary table: Neglect

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence; Magnitude of Effect
Bucharest Early Intervention Project	Usual care (institutional care in Romania)	Mental health and behavior	1, ^{118,120,123,125,129} 136	Low; odds ratio 2.8 [95%CI 1.2 to 6.4]
		Healthy caregiver-child relationship	1, ^{121,125,127} 136	Low; NR
		Healthy development	1, ^{117,119,121,122,124,126,128} 136	Low; effect size ^a =0.47 or 0.62
SafeCare	Usual care	Safety	1, ¹⁰⁰ 2175	Moderate HR=0.74 to 0.83

^aEffect size measure is not specified, so we did not classify the magnitude of effect as small, medium, or large.

^bThe comparison group for one study was an n < 10 participants.

Note: Table is organized alphabetically by intervention name. All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis.

Abbreviations: CI = confidence interval; G = group; HR = hazard ratio; N = number; NR = not reported.

Type of Maltreatment Exposure: Physical Abuse

Key Points

- *Combined Parent-Child Cognitive Behavioral Therapy (CPC-CBT)*: One RCT evaluated an intervention, CPC-CBT, designed specifically to treat children exposed to physical abuse. This study found greater improvements in child mental and behavioral health among children in the intervention group compared with an inactive control (low SOE of benefit).¹⁰⁷
- *Parent-Child Interaction Therapy Adaptation Package (PCIT-AP)*: An RCT evaluating an adaptation of PCIT for physically abusive parents and their children, which included a motivational interviewing orientation, found significantly reduced child recidivism (median follow-up time 850 days postbaseline) in favor of the intervention (low SOE of benefit).⁹⁶

Detailed Synthesis

We summarize the outcomes and SOE for each study in Table 103. We do not present a detailed synthesis section because all studies are discussed in previous sections of the Results chapter.

Table 103. Strength of evidence summary table: Physical abuse

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence; Magnitude of Effect
Combined Parent-Child Cognitive Behavioral Therapy	Active control ^a	Mental and behavioral health	1, ¹⁰⁷ 75	Low; medium (d=0.61)
Parent-Child Interaction Therapy (PCIT) Adaptation Package ^b	Usual care	Safety	1, ⁹⁶ 77	Low; NR

^aActive comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

^b“Package” refers to the inclusion of a supplemental motivational intervention orientation.

Note: Table is organized alphabetically by intervention name. All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen’s $d = 0.20, 0.50, \text{ and } 0.80$.¹⁷⁶

Abbreviations: G = group; N = number; NR = not reported.

Type of Maltreatment Exposure: Sexual Abuse

Key Points

- *Group Psychotherapy for Sexually Abused Girls:* One RCT assessed the efficacy of a group-based intervention developed specifically to treat sexually abused girls compared with conventional psychoanalytic therapy (active control). The study found the conventional therapy was superior to the group-based approach; as noted previously, this comparative benefit was sustained at a 2-year postbaseline followup (low SOE of greater benefit for active control group).¹¹³
- *Group Treatment Program for Sexual Abuse:* One nonrandomized study evaluated a group treatment program developed for child victims of sexual abuse. The study found significant benefit in favor of the intervention for improving mental and behavioral health outcomes compared with wait-list control; however, as noted previously, the findings must be interpreted with caution in light of the nonrandomized design and very small sample size (low SOE of benefit).¹¹⁴
- *Trauma-Focused Cognitive Behavioral Therapy (TF-CBT):* Two RCTs evaluated TF-CBT with sexually abused children, each with a different active control. In both trials, TF-CBT was superior in improving child mental and behavioral health outcomes, including sexualized behavior, and caregiver-child relationship outcomes (low SOE of benefit).^{108,115}

Detailed Synthesis

We summarize the outcomes and SOE for each study in Table 104. We do not present a detailed synthesis section because all studies are discussed in previous sections of the Results chapter.

Table 104. Strength of evidence summary table: Sexual abuse

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence; Magnitude of Effect
Group Psychotherapy for Sexually Abused Girls	Active control ^a	Mental and behavioral health	1 ¹¹³ ; 71	Low, G1<G2 Small to medium (d=0.36 to 0.79)
Group Treatment Program for Sexual Abuse	Inactive control	Mental and behavioral health	1 ¹¹⁴ ; 30	Low; NR
Trauma-Focused Cognitive Behavioral Therapy	Active control ^b	Mental and behavioral health	2 ^{108,115} ; 315	Low; small to medium (d=0.30 to 0.70)
		Healthy caregiver-child relationship	1 ¹⁰⁸ ; 229	Low; small to medium (d=0.38 or 0.57)

^aActive comparator is an approach representative of a conventional practice in the field.

^bOne comparator is a conventional approach, the other a derived approach.

Note: Table is organized alphabetically by intervention name. All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen's $d = 0.20, 0.50$, and 0.80 .¹⁷⁶

Abbreviations: G = group; N = number; NR = not reported.

Presence of Mental or Behavioral Health Problems or Other Special Needs

Key Points

- *Combined Parent-Child Cognitive Behavioral Therapy (CPC-CBT):* One trial evaluating CPC-CBT compared with an active control found significantly greater short-term improvements in trauma symptoms (total diagnostic score; self-report and caregiver report on child) compared with an active control (low SOE of benefit); as noted previously, the short-term outcomes faded by the 3-month postintervention followup (low SOE of benefit).¹⁰⁷
- *Group Psychotherapy for Sexually Abused Girls:* In one RCT, conventional psychoanalytic therapy resulted in significantly greater long-term improvements in re-experiencing and avoidance symptoms of traumatic stress compared with an experimental group-based intervention; as noted previously, this comparative benefit was sustained at a 2-year postbaseline followup (low SOE of benefit).¹¹³
- *Group Treatment Program for Sexual Abuse:* One nonrandomized study with girls who were symptomatic for attentional and behavioral problems found significant benefit in favor of the intervention in these and other mental and behavioral health outcomes compared with wait-list control; as noted previously, the findings must be interpreted with caution in light of the nonrandomized design and very small sample size (low SOE of benefit).¹¹⁴
- *Trauma-Focused Cognitive Behavioral Therapy (TF-CBT):* In two RCTs using two different active controls, TF-CBT was superior in reducing multiple trauma symptoms (re-experiencing, avoidance, hypervigilance) (low SOE of benefit).^{108,115}

Detailed Synthesis

We summarize the outcomes and SOE for each study in Table 105. We do not present a detailed synthesis section because all studies are discussed in previous sections of the Results chapter.

Table 105. Strength of evidence summary table: Mental or behavioral health problems

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence; Magnitude of Effect
Combined Parent-Child Cognitive Behavioral Therapy	Active control ^a	Mental and behavioral health	1, ¹⁰⁷ 75	Low; medium (d=0.61)
Group Psychotherapy	Active control ^a	Mental and behavioral health	1, ¹¹³ 71	Low, G1<G2 Small to medium (d=0.36 to 0.79)
Group Treatment Program for Sexual Abuse	Inactive control	Mental and behavioral health	1, ¹¹⁴ 30	Low; NR
Trauma-Focused Cognitive Behavioral Therapy	Active control ^c	Mental and behavioral health	2, ^{108,115} 315	Low; small to medium (d=0.30 to 0.70)
		Healthy caregiver-child relationship	1, ¹⁰⁸ 229	Low; small to medium (d=0.38 or 0.57)

^aActive comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

^bOne comparator is a conventional approach, the other a derived approach.

Note: Table is organized alphabetically by intervention name. All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen's *d* = 0.20, 0.50, and 0.80.¹⁷⁶

Abbreviations: G = group; NR = not reported.

KQ 4b. Child Welfare and Child Well-Being Outcomes in Caregiver Subgroups

Primary Caregiving Context: Maltreating Parents

Key Points

- *Attachment and Biobehavioral Catch-up (ABC)*: One trial evaluated ABC with biological parents involved with child welfare services and their young children. The study found significantly greater improvements in child mental and behavioral health and caregiver-child relationship outcomes compared with an active control (low SOE for benefit).⁸¹⁻⁸³
- *Attachment-based Intervention*: One RCT evaluated an attachment-based intervention with parent-child pairs. Parents were substantially and legally documented for maltreatment, reported for maltreatment by a community organization, or self-reported the child's maltreatment exposure. The study found improved caregiver-child relationship outcomes in the intervention arm compared with usual care (low SOE of benefit).⁸⁶
- *Child-Parent Psychotherapy (CPP)*: In two RCTs with maltreating parents and their young children, a variant of Child-Parent Psychotherapy developed by Cicchetti and colleagues resulted in improved caregiver-child relationship outcomes compared with usual care (low SOE of benefit).^{87,88}

- *Combined Parent-Child Cognitive Behavioral Therapy (CPC-CBT)*: One RCT evaluating CPC-CBT with physically abusive parents and their children found greater improvements in child mental and behavioral health outcomes compared with an inactive control; as noted previously, the short-term outcomes faded by 3-month postintervention followup (low SOE of benefit).¹⁰⁷
- *New Orleans Intervention*: One nonconcurrent cohort study evaluated the New Orleans Intervention with adjudicated infants and young children (i.e., in foster care) and their biological parents. This study found significantly reduced risk of child recidivism compared with usual care and also with a comparison group of children who were eligible but did not receive the intervention. As noted previously, the study also found that the intervention, compared with usual care, resulted in increased termination of parental rights, decreased reunification, and reduced risk of maternal recidivism with a subsequent child among mothers whose rights had been terminated (low SOE of benefit).¹³⁰
- *Parent-Child Interaction Therapy Adaptation Package (PCIT-AP)*: One RCT (efficacy trial) evaluating an adaptation of PCIT for physically abusive parents and their children, which included a motivational interviewing orientation, found significantly reduced child recidivism (median follow-up time 850 days postbaseline) in favor of the intervention;⁹⁶ a trend towards this effect was found in a subsequent effectiveness trial that targeting parents referred for services by child welfare for neglect and/or physical abuse (low SOE of benefit).⁹⁵
- *SafeCare*: One large-scale effectiveness RCT evaluated SafeCare, an intervention designed for parents involved with CPS due to neglect. The intervention resulted in significantly reduced child recidivism (rereports to child welfare) compared with usual care. As noted previously, the benefits of SafeCare were strongest for preschool-age children compared with the full study population, which included children up to 12 years of age (moderate SOE of benefit).¹⁰⁰

Detailed Synthesis

We summarize the outcomes and SOE for each study in Table 106. We do not present a detailed synthesis section because all studies are discussed in previous sections of the Results chapter.

Table 106. Strength of evidence summary table: Maltreating parents

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence; Magnitude of Effect
Attachment and Biobehavioral Catch-up	Active control ^a	Mental health and behavior	1, ^{82,83} 120	Low; NR
		Healthy caregiver-child relationship	1, ⁸¹ 120	Low; NR
Attachment-based Intervention	Usual care	Healthy caregiver-child relationship	1, ⁸⁶ 79	Low; small to medium (d=0.47, r=0.36 or 0.37)
Child-Parent Psychotherapy ^b	Usual care	Healthy caregiver-child relationship	2, ^{87,88} 141	Low; medium to large (h=0.64 to 1.34)
Combined Parent-Child Cognitive Behavioral Therapy	Active control ^a	Mental and behavioral health	1, ¹⁰⁷ 75	Low; medium (d=0.61)
New Orleans Intervention	Usual care	Safety	1, ¹³⁰ 255	Low RRR=0.67 to 0.75
		Permanency	1, ¹³⁰ 240	Low, G1 < G2
PCIT Adaptation Package	Usual care	Safety	2, ^{95,96} 153	Low
SafeCare	Usual care	Safety	1, ¹⁰⁰ 2175	Moderate HR=0.74 to 0.83

^aActive comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

^bIntervention is a variant of relationship-based dyadic psychotherapy as developed and manualized by Cicchetti and colleagues.^{87,88}

Note: Table is organized alphabetically by intervention name. All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen's *d* = 0.20, 0.50, and 0.80 and correlation coefficient *r* = 0.10, 0.30, and 0.50.¹⁷⁶ When authors use *eta* we use the interpretation that the authors provide.¹⁷⁷ We include an effect size range when more than two effect sizes are reported.

Abbreviations: G = group; HR = hazard ratio; N = number; NR = not reported; RRR = relative risk reduction.

Primary Caregiving Context: Foster and Kinship Caregivers

Key Points

- *Attachment and Biobehavioral Catch-up*: In three RCTs with different comparators, ABC with foster caregivers and young children improved child mental and behavioral health, caregiver-child relationship, and healthy development outcomes compared with both an active control and usual care (low SOE of benefit).⁷⁷⁻⁸⁰
- *Bucharest Early Intervention Project (BEIP)*: The BEIP trial demonstrated numerous long-term child mental and behavioral health, caregiver-child relationship, and developmental benefits for young children removed from institutionalized care and placed in an enhanced foster care intervention compared with children who remained in institutional care (low SOE of benefit).¹¹⁷⁻¹²⁹
- *Keeping Foster and Kinship Parents Trained and Supported (KEEP)*: In one large effectiveness trial, KEEP resulted in greater improvements in child mental and behavioral health, caregiver-child relationship, and positive permanency outcomes (e.g., reunification with biological parent or another relative or adoption) compared with usual care (low SOE of benefit).^{91,92}

- *Middle School Success*: An RCT evaluating an intervention that targeted both youth and their foster caregivers found significant benefit of the intervention on both child mental and behavioral health and placement outcomes compared with youth in routine foster care (low SOE of benefit).^{136,137}
- *Multidimensional Treatment Foster Care for Preschoolers (MTFC-P)*: In one RCT, a multimodal intervention that included foster parent training, therapeutic preschool, and medication management resulted in superior mental and behavioral health, caregiver-child, developmental, and increased rates of positive permanency outcomes compared with usual care (low SOE).^{138,139,141-144}

Detailed Synthesis

Detailed Synthesis

We summarize the outcomes and SOE for each study in Table 107. We do not present a detailed synthesis section because all studies are discussed in previous sections of the Results chapter.

Table 107. Strength of evidence summary table: Foster or kinship parents

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence; Magnitude of Effect
Attachment and Biobehavioral Catch-up	Active control ^a	Mental health and behavior	1, ^{77,78} 93	Low; NR
		Healthy caregiver-child relationship	1, ^{79,81} 46	Low; NR
		Healthy development	1, ⁸⁵ 37	Low; NR
	Wait list	Mental and behavioral health	1, ⁸⁰ 58	Low; medium (partial eta squared=0.436 or 0.511)
		Healthy caregiver-child relationship	1, ⁸⁰ 58	Low; medium or large (partial eta squared=0.59 or 0.791)
Bucharest Early Intervention	Usual care (institutional care in Romania)	Mental health and behavior	1, ^{118,120,123,125,129} 136	Low; odds ratio 2.8 [95%CI 1.2 to 6.4]
		Healthy caregiver-child relationship	1, ^{121,125,127} 136	Low; NR
		Healthy development	1, ^{117,119,121,122,124,126,128} 136	Low; effect size ^b =0.47 or 0.62
Keeping Foster and Kinship Parents Trained and Supported	Usual care	Mental and behavioral health	1, ⁹¹ 700	Moderate; small (d=0.26)
		Healthy caregiver-child relationship	1, ⁹¹ 700	Moderate; small (d=0.29)
		Permanency	1, ⁹¹ 700	Low

Table 107. Strength of evidence summary table: Foster or kinship parents (continued)

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence; Magnitude of Effect
Middle School Success	Usual care	Mental health and behavior	1, ^{136,137} 100	Low; small to medium (d=0.35 to 0.57)
		Placement stability	1, ¹³⁶ 100	Low; medium (d=0.50)
Multi-dimensional Treatment Foster Care for Preschoolers	Usual care	Mental health and behavior	1, ¹⁴² 117	Low; medium (d=0.64 to 0.68)
		Healthy caregiver-child relationship	1, ^{139,141} 117	Low; NR
		Healthy development	1, ¹³⁸ 23	Low; NR
		Permanency	1, ^{140,143} 90	Low; NR

^aActive comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

^bEffect size measure is not specified, so we did not classify the magnitude of effect as small, medium, or large.

Note: Table is organized alphabetically by intervention name. All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen's *d* = 0.20, 0.50, and 0.80.¹⁷⁶ When authors use partial eta squared we use the interpretation that the authors provide.⁸⁰ We include an effect size range when more than two effect sizes are reported.

Abbreviations: CI = confidence interval; G = group; N = number; NR = not reported.

Key Question 5. Comparative Effectiveness of Interventions With Children Exposed to Maltreatment for Engaging Children and/or Caregivers in Treatment

Organization

This section takes the same organizational approach as that followed in key question (KQ) 1 and KQ 2. However, we identified a single intervention for inclusion in this KQ. We remind the reader that benefit is denoted in the results tables using a greater (“>”) sign (e.g., Group 1 > Group 2) and that within-group changes are denoted as improvement (“+”), detriment (“-”), or nonsignificant change (“ns”) for studies that provided these data.

Description of Included Studies

We present the results of one trial (two articles) (Table 108)^{95,97} that assessed the effectiveness of an intervention for engaging participants in treatment and treatment retention.

Table 108. Number of trials and articles investigating treatment engagement or retention

Intervention	Trials
Motivational Intervention	1 ^a
Total	1

^aReported in two articles.

Motivational Intervention

We identified one large effectiveness randomized controlled trial (RCT), reported in two articles, evaluating a motivational orientation intervention designed to improve parenting program retention compared with a community standard orientation provided by the child welfare agency (Table 109).^{95,97} In a previous efficacy trial,⁹⁶ the authors describe the intervention as a self-motivational intervention (MI) orientation comprising six clinic-based group sessions and employing a variety of motivational strategies including testimonials from parents who completed the Parent-Child Interaction Therapy (PCIT) adaptation, decisional

exercises weighing the pros and cons of harsh physical discipline and of change, encouraging parents to develop their own list of parenting and parent-child relationship goals, elaborating discrepancy between current parent-child interactional patterns and personalized goals, and encouraging the parents' commitment to change. The standard orientation comprised six sessions and was primarily informational and educational. Topics addressed in the standard orientation included the roles of child welfare and of the service provider organization, definitions of child maltreatment and how it affects children, and information about the possible insight-oriented links between a parent's own childhood experiences and current parenting practices.

Table 109. Motivational intervention: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Chaffin et al., 2009 ⁹⁷	Maltreating parents of children ages 4 to 12 years, primarily neglected (70%) or physically abused (23%)	RCT 6 weeks (treatment engagement) and ≥18 to 20 weeks (treatment retention)	G1: PCIT-AP G2: MI +usual care G3: SAU orientation + PCIT G4: SAU	G1: 34 G2: 41 G3: 36 G4: 42 Overall N=153 ^a	Medium
Chaffin et al., 2011 ⁹⁵	Maltreating parents of children ages 4 to 12 years, primarily neglected (70%) or physically abused (23%)	RCT Median follow-up time=64 days (after 6-week intervention)	G1: MI G2: SAU orientation	G1: 75 G2: 78 Overall N=153 ^a	Medium

^a192 participants were randomized to one of the two orientation interventions, however, 39 were withdrawn before randomization to either PCIT or services as usual.

Note: Both articles listed here are from the same trial.

Abbreviations: G = group; MI = motivational orientation intervention; PCIT-AP = Parent-Child Interaction Therapy Adaptation Package (i.e., PCIT combined with motivational orientation); RCT = randomized controlled trial; SAU = services as usual (community standard orientation + parenting program).

In an initial article reporting on the results of the subsequent effectiveness trial, Chaffin and colleagues⁹⁷ compare the MI with the community standard orientation, combined with either PCIT or the community standard didactic parenting program. In a subsequent article,⁹⁵ the authors examine the relative effects of PCIT and the MI by contrasting varying combinations of experimental and usual care service components. Refer to the results for KQ 2 for the Parent-Child Interaction Therapy Adaptation Package for more detail about the study arms.

Key Points

- **Treatment engagement:** In one large effectiveness trial, maltreating parents who participated in the MI orientation reported greater readiness for change and other positive self-motivational outcomes compared with parents who participated in a standard orientation (moderate strength of evidence [SOE]).^{95,97}
- **Treatment retention:** In one large effectiveness trial, maltreating parents who participated in PCIT combined with the MI orientation had higher treatment completion rates compared with parents who participated in a standard orientation combined with PCIT (moderate SOE)⁹⁷ (Table 81).

Detailed Synthesis

Table 110 presents the results of the MI trial;^{95,97} additional study details are provided in the evidence tables (Appendix E). The authors first randomized participants either to the MI orientation or to the standard orientation conditions. In the first article,⁹⁷ Chaffin and colleagues assess participants' readiness for change upon completion of their respective orientations. Parents who participated in the MI orientation had consistently greater improvements on the overall readiness scale and on the "readiness to change" and "attitude toward the program" subscales compared with those in the standard orientation. Participants were then randomized a second time to receive either PCIT or the standard parenting program. The PCIT and standard parenting programs had a comparable number of sessions. The study found higher treatment completion rates among participants who received PCIT combined with the MI orientation compared with participants who received any of the other conditions: (a) the MI condition combined with the community standard parenting program, (b) the standard orientation in conjunction with PCIT, or (c) the services as usual (standard orientation combined with standard parenting program). In the second article the authors again compared participants' readiness for change across study arms and provide an effect size.⁹⁵ Though participants in both orientation conditions reported increased readiness for change, caregivers who participated in the MI orientation reported greater improvements in readiness for change.

Table 110. Results: Motivational intervention

First Author et al., Year	Comparison Groups	Treatment Engagement ^a	Treatment Retention
Chaffin et al, 2009 ⁹⁷	G1: PCIT-AP G2: MI + SAU G3: SAU orientation + PCIT G4: SAU	<p>Increased readiness to change total score (Readiness for Parenting Change Scale) (G1, G2)⁺ > (G3, G4)⁺, p<0.01</p> <p>Increased readiness to change (Readiness for Parenting Change Scale subscale) (G1, G2)>(G3, G4), p<0.05</p> <p>Better attitude to the program (Readiness for Parenting Change Scale subscale) (G1, G2)>(G3, G4), p<0.05</p> <p>Increased self-efficacy (Readiness for Parenting Change Scale subscale) (G1, G2)>(G3, G4), p=0.06</p>	<p>Higher percentage of treatment completers G1>G2, p=0.01 G1>G3, p=0.05 G1>G4, p=0.05</p>
Chaffin et al., 2011 ⁹⁵	G1: MI G2: SAU orientation	<p>Increased readiness to change total score (Readiness for Parenting Change Scale) G1⁺>G2⁺, p<0.01 d=0.33^b</p>	NA

^aTreatment engagement outcomes were assessed at the end of the motivational intervention, before participants began the second phase of intervention (i.e., either the PCIT adaptation or usual care parenting program).

^bCohen's d effect size index of the difference between groups means: 0.20 = small; 0.50 = medium; 0.80 = large.¹⁷⁶

Note: Greater comparative benefit is denoted in the results tables using a greater (">") sign.

Abbreviations: G = group; MI = motivational orientation intervention; NA = not applicable; PCIT-AP = Parent-Child Interaction Therapy Adaptation Package (i.e., PCIT combined with motivational orientation intervention); SAU = services as usual (community standard orientation + parenting program); SM = self-motivational orientation.

Although the body of evidence is limited to a single trial for the MI orientation, we graded the SOE as moderate for improved treatment and engagement outcomes due to the size of the study and because it was an effectiveness trial (Table 111).

Table 111. Strength of evidence for treatment engagement and retention outcomes: Motivational intervention

Intervention (G1)	Comparator (G2)	Outcome	Number of Trials, Number of Participants	SOE and Magnitude of Effect
Motivational Intervention	Standard orientation	Treatment engagement	1 ^{95,97} ; 153	Moderate Small (d=0.33)
Parent-Child Interaction Therapy Adaptation Package ^d	Parent-Child Interaction Therapy plus standard orientation	Treatment retention	1 ⁹⁷ ; 153	Moderate

^a“Package” refers to the combination of PCIT with the motivational orientation intervention.

Note: For estimation of the magnitude of effect, we include only the statistically significant ($p < 0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen’s $d = 0.20, 0.50$, and 0.80 .¹⁷⁶ Authors did not report effect sizes for some measures.

Abbreviations: G = group; MI = motivational orientation intervention; PCIT-AP = Parent-Child Interaction Therapy Adaptation Package (i.e., PCIT combined with motivational orientation); RCT = randomized controlled trial; SAU = services as usual (community standard orientation + parenting program).

Key Question 6. Adverse Events Associated With Interventions for Children Exposed to Maltreatment

Organization

This section takes the same organizational approach as that followed in key question (KQ) 1 and KQ 2. However, we identified a single intervention for inclusion in this KQ.

Description of Included Studies

We require studies to report active surveillance of harms to be included in KQ 6. Only one study met inclusion criteria for KQ 6 (Table 112). Since this comparative evidence review (CER) focuses on a particularly vulnerable population, we also describe what appear to be spontaneously reported adverse events; however, we do not grade the strength of evidence (SOE) for these outcomes.

Table 112. Number of trials and articles investigating adverse events

Parenting Interventions	Trials
Trauma-Focused Cognitive Behavioral Therapy ¹¹⁵	1
Total	1

Active Surveillance of Harms (Included in KQ 6)

Trauma-Focused Cognitive Behavioral Therapy

Key Points

- **Adverse events:** Compared with an active (derived) comparator, a greater number of children in the comparative condition experienced removal from treatment because of their persistent sexually inappropriate behavior involving another child or adult (low SOE).

Detailed Synthesis

Only one study reported active surveillance of adverse events; this trial compared TF-CBT with nondirective supportive therapy.¹¹⁵ Specifically, the study assessed the incidence of sexually inappropriate behavior that involved another child or adult. During the trial, Cohen and colleagues report that 6 of the 28 children in nondirective supportive therapy and 0 of the 39 children in TF-CBT persistently exhibited such behavior and required removal from treatment. We rate the SOE for the comparative harms of these two interventions as low (Table 113) as fewer children in the TF-CBT group experienced the adverse event of removal from treatment.

Table 113. Detailed strength of evidence grading table: Trauma-focused cognitive behavioral therapy

Intervention and Comparator	Outcome	Studies; Subjects	Risk of Bias	Consistency	Directness	Precision	SOE Grade; Magnitude of Effect
TF-CBT vs. nondirective supportive therapy	Adverse events	1; ¹¹⁵ 67	M	Unknown, single study	Direct	Precise	Low

Note: For estimation of the magnitude of effect, we include only the statistically significant ($p < 0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Authors did not report an effect size for this outcome.

Abbreviations: M = medium; SOE = strength of evidence; TF-CBT = Trauma-Focused Cognitive Behavioral Therapy.

Spontaneous Reporting of Adverse Events

Parent-Child Interaction Therapy Adaptation

Key Points

- None. This study does not meet KQ 6 inclusion criteria.

Detailed Synthesis

Because this CER focuses on a particularly vulnerable population, we also report here any instance of adverse events described by study authors. We do not rate the SOE for this outcome because it did not meet our inclusion criteria for this KQ; that is, the article does not report active surveillance of adverse events.

In a trial comparing a PCIT Adaptation Package with usual care,^{95,97} the authors described an instance of an adverse event but did not describe their method of monitoring adverse events. In the study, a participant whose child was in foster care requested to be removed from the PCIT condition because of difficulties separating from the child after dyadic sessions. The authors did not report any such instances for the other treatment groups.

Discussion

This chapter summarizes key findings and strength of evidence (SOE) for each key question (KQ), followed by a section on the applicability of the findings, a summary of the limitations of the comparative review process, limitations of the evidence base, and gaps in the evidence that may benefit from future research.

Key Findings and Strength of Evidence

Overview

Overall, the evidence from 24 trials (23 randomized and 1 nonrandomized controlled trial) and one cohort study (reported in 53 articles) included in this comparative effectiveness review (CER) provides preliminary support for a number of promising approaches for addressing child exposure to maltreatment. We categorized the array of interventions in the literature as parenting interventions, trauma-focused treatments, or enhanced foster care intervention approaches. Within and across these intervention types, approaches varied in treatment target, intensity, modality, and theoretical conceptualizations of therapeutic change. Most studies identified for this review were conducted in the United States and evaluated parenting interventions. In contrast, comparative studies of trauma-focused treatments were sparse, with three of seven trials focused on one intervention or an adaptation of that intervention.^{108,115,116} Our review also included five trials of enhanced foster care interventions; these approaches all were directed at the child—either alone or in combination with a caregiver component. With the exception of two interventions, KEEP and SafeCare, the body of evidence for interventions that addressed child well-being or child welfare outcomes in maltreated children was predominantly low strength of evidence or was insufficient to draw firm conclusions.

We acknowledge that the inclusion criterion of children with known CPS involvement or maltreatment may be considered a rarified approach by some. We recognize, as well, that this decision may have resulted in the exclusion of trials that, arguably, might bolster evidence for included interventions or support inclusion of other interventions with at least low strength of evidence. Our intent was threefold: (1) to reduce the noise of clinical heterogeneity that currently undermines the extant evidence base, (2) to maintain the rigorous approach for study inclusion that has been employed across AHRQ CERs, and (3) to avert yet more heterogeneity due to inconsistent, vague, or absent definitions of samples of children defined as ‘at risk’ or an admixture of ‘at risk’ and maltreated. As we attempted to follow these principles, we have striven for clarity about our decisions in order to better inform readers. With these perspectives in mind, we believe that this review makes a groundbreaking contribution to the field that challenges researchers, clinicians, and policymakers.

Given the apriori exclusions, our review illuminates major substantive and methodological gaps in the evidence and highlights critical areas for future research. To be fair, these gaps reflect the relatively new field of evidence-based mental health treatment provided in the context of the myriad and complex challenges of caring for maltreated children, engaging and retaining maltreating parents in treatment, and working within the parameters of the child welfare arena. Head-to-head studies are scarce, as are multiple or independent (i.e., tested by researchers unaffiliated with intervention developers) trials. Sample sizes are commonly very small. A gap in the literature with implications for widespread implementation is the issue of “dose” or how much of an intervention is needed to effect change. None of the included studies addressed this

issue. With the exception of studies involving younger children, few interventions were designed for or studied efficacy or effectiveness within specific age or developmental ranges. Similarly, studies rarely took into consideration or elucidated findings as they related to maltreatment type, severity, chronicity, timing, and exposure to other traumatic experiences. Also underrepresented in the literature were intervention studies explicitly evaluating efficacy or effectiveness with the most vulnerable and challenging-to-serve families, that is, maltreated children whose biological parents were struggling with substance abuse, mental health problems, or domestic violence. In some instances, such families were intentionally excluded from a study sample.

Key Question 1. Comparative Effectiveness of Interventions for Improving Child Well-Being Outcomes

The summary of results for KQ 1 is presented in Table 14. For KQ 1, we proposed four sets of outcomes representing key dimensions of child well-being: child mental and behavioral health, the quality of the caregiver-child relationship (e.g., child attachment, caregiver responsiveness and sensitivity, positive parental attitudes toward childrearing), children's development (e.g., cognition, language, physical maturation), and school-based functioning (e.g., grade retention, disciplinary referrals, attendance). Only three trials reported developmental outcomes, and we identified no studies eligible for inclusion that assessed school-based functioning. The body of evidence for interventions that addressed child well-being in maltreated children was predominantly low SOE or was insufficient to draw firm conclusions. As specified in the results section, low SOE was attributable to the presence of a small number of distinct trials; in some cases, the SOE also took into account inconsistent findings across outcomes, imprecise or nonstatistically significant results, and/or samples that resulted in underpowered analyses. The low SOE ratings represent an important limitation of the extant research and call into question the replicability and generalizability of results. At the same time, the ratings should be considered in light of the emerging status of this line of research and noteworthy barriers to the rigorous study of interventions for maltreated children.

Of the 21 eligible trials for this KQ, the vast majority provided evidence for different interventions with most bodies of evidence consisting of only one trial, many with very small sample sizes. Among the 19 trials assessing children's mental and behavioral health, 14 trials resulted in statistically significant between-group differences in one or more measures. A moderate SOE grade was applied for only one intervention, KEEP, which was assessed in a large effectiveness trial. Only two interventions were tested in more than 1 trial (both graded as low SOE): Attachment and Biobehavioral Catch-up^{77-83,85} and Trauma-Focused Cognitive-Behavioral Therapy.^{108,115}

Regarding healthy caregiver-child relationship outcomes, 11 of the 16 trials assessing relevant outcomes resulted in statistically significant between-group differences on one or more measures. A moderate SOE grade was applied only to KEEP, which was assessed in a large effectiveness trial. Studies predominantly assessed caregiver behavior changes via parent self-report measures or subscales of measures, which reflected varying degrees of established validity. This heterogeneity of measurement made it difficult to generalize findings across studies for the caregiver-child relationship outcomes.

Table 114. Summary strength of evidence KQ 1 and KQ 2

Type	Intervention (G1)	Comparison (G2)	Outcome	n Trials, Participants	Strength of Evidence; Magnitude of Effect
Parenting Interventions	Attachment and Biobehavioral Catch-up	Active control ^a	Mental and behavioral health	2 ^{77,78,82,83} ; 213	Low; NR
			Healthy caregiver-child relationship	2 ^{79,81} ; 166	Low; NR
			Healthy development	1 ⁸⁵ ; 37	Low; NR
		Wait list	Mental and behavioral health	1 ⁸⁰ ; 58	Low; medium (Partial eta squared=0.436 or 0.511)
			Healthy caregiver-child relationship	1 ⁸⁰ ; 58	Low; medium or large (Partial eta squared=0.59 or 0.791)
	Attachment-based Intervention	Usual care	Mental and behavioral health	1 ⁸⁶ ; 79	Insufficient
			Healthy caregiver-child relationship	1 ⁸⁶ ; 79	Low; small to medium (d=0.47, r=0.36 or 0.37)
	Child-Parent Psychotherapy ^b	Active control ^a	Healthy caregiver-child relationship	2 ^{87,88} ; 159	Insufficient
		Usual care	Healthy caregiver-child relationship	2 ^{87,88} ; 141	Low; medium to large (h=0.64 to 1.34)
	Incredible Years CoParenting Adaptation	Usual care	Mental and behavioral health	1 ⁸⁹ ; 64	Insufficient
			Healthy caregiver-child relationship	1 ⁸⁹ ; 64	Low; small to medium (d=0.40 or 0.59)
	Keeping Foster and Kinship Parents Trained and Supported	Usual care	Mental and behavioral health	1 ⁹¹ ; 700	Moderate; small (d=0.26)
			Healthy caregiver-child relationship	1 ⁹¹ ; 700	Moderate; small (d=0.29)
			Placement stability	1 ⁹¹ ; 700	Insufficient
			Permanency	1 ⁹¹ ; 700	Moderate; NR
	Nurse-Home Visitation Intervention	Usual care	Mental and behavioral health	1 ⁹³ ; 163	Insufficient
			Healthy caregiver-child relationship	1 ⁹³ ; 163	Insufficient
			Safety	1 ⁹³ ; 163	Insufficient
	PCIT Adaptation Package	PCIT Adaptation Package enhanced ^c	Safety	1 ⁹⁶ ; 75	Insufficient
		Usual care	Safety	2 ^{95,96} ; 153	Low; NR ^d
	PCIT Adaptation Package enhanced ^c	Usual care	Safety	1 ⁹⁶ ; 88	Insufficient
	SafeCare	Usual care	Safety	1 ¹⁰⁰ ; 2,175	Moderate; HR=0.74 to 0.83
	Videotape Intervention	Control videotape	Mental and behavioral health	1 ¹⁰¹ ; 30	Insufficient
			Healthy caregiver-child relationship	1 ¹⁰¹ ; 30	Insufficient

Table 114. Summary strength of evidence KQ 1 and KQ 2 (continued)

Type	Intervention (G1)	Comparison (G2)	Outcome	n Trials, Participants	Strength of Evidence; Magnitude of Effect
Trauma-Focused Treatments	Combined Parent-Child Cognitive Behavioral Therapy	Active control ^a	Mental and behavioral health	1 ¹⁰⁷ ; 75	Low; medium (d=0.61)
			Healthy caregiver-child relationship	1 ¹⁰⁷ ; 75	Insufficient
	Eye Movement Desensitization and Reprocessing	Active control ^a	Mental and behavioral health	1 ¹¹² ; 14	Insufficient
	Group Psychotherapy for Sexually Abused Girls	Active control ^e	Mental and behavioral health	1 ¹¹³ ; 71	Low (G1<G2); small to medium (d=0.36 to 0.79)
	Group Treatment Program for Sexual Abuse	Inactive control	Mental and behavioral health	1 ¹¹⁴ ; 30	Low; NR
	Trauma-Focused Cognitive Behavioral Therapy	Active control ^f	Mental and behavioral health	2 ^{108,115} ; 315	Low; small to medium (d=0.30 to 0.70)
			Healthy caregiver-child relationship	1 ¹⁰⁸ ; 229	Low; small to medium (d=0.38 or 0.57)
	Trauma-Focused Cognitive Behavioral Therapy Group Adaptation	Active control ^e	Mental and behavioral Health	1 ¹¹⁶ ; 44	Insufficient
			Healthy caregiver-child relationship	1 ¹¹⁶ ; 44	Insufficient
Enhanced Foster Care Interventions	Bucharest Early Intervention Project	Usual care (institutional care in Romania)	Mental health and behavior	1 ^{118,120,123,125,129} ; 136	Low; Odds ratio 2.8 [95%CI 1.2 to 6.4]
			Healthy caregiver-child relationship	1 ^{121,125,127} ; 136	Low; NR
			Healthy development	1 ^{117,119,121,122,124,126,128} ; 136	Low; effect size ^g =0.47 or 0.62
	Fostering Healthy Futures	Inactive control	Mental and behavioral health	1 ¹³¹ ; 156	Low; small to medium (d=0.30 to 0.51)
			Placement stability	1 ¹³² ; 110	Low; OR=0.18 to 0.56
			Permanency	1 ¹³² ; 110	Low; OR=5.14
	Middle School Success	Usual care	Mental health and behavior	1 ^{136,137} ; 100	Low; small to medium (d=0.35 to 0.57)
			Placement stability	1 ¹³⁶ ; 100	Low; medium (d=0.50)
	Multi-dimensional Treatment Foster Care for Preschoolers	Usual care	Mental health and behavior	1 ^{142,179} ; 117	Low; medium (d=0.64 to 0.68)
			Healthy caregiver-child relationship	1 ^{139,141} ; 117	Low; NR
			Healthy development	1 ¹³⁸ ; 23	Low; NR
			Permanency	1 ^{140,143} ; 90	Low; NR
	New Orleans Intervention	Usual care	Safety	1 ¹³⁰ ; 255	Low; RRR=0.67 to 0.75
			Permanency	1 ¹³⁰ ; 240	Low (G1<G2); NR

^aActive comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

^bIntervention is a variant of relationship-based dyadic psychotherapy as developed and manualized by Cicchetti and colleagues.^{87,88}

^c“Enhanced” refers to the provision of individualized services to the parents.

^dChaffin et al. (2011) report a hazard ratio, but it is not statistically significant (i.e., reported as a trend).

^eActive comparator is an approach representative of a conventional practice in the field.

^fOne comparator is a conventional approach; the other a derived approach.

^gEffect size measure is not specified; therefore, we did not classify the magnitude of effect as small, medium, or large.

Note: Table is organized alphabetically by intervention name. All results are G1>G2 unless otherwise noted. For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not

calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as follows: Cohen's $d=0.20$, 0.50 , and 0.80 ; Cohen's $h=0.20$, 0.50 , and 0.80 ; and correlation coefficient $r=0.10$, 0.30 , and 0.50 .¹⁷⁶ When authors use Eta or partial eta squared effect sizes we use the interpretation that the authors provide.^{80,177} We include an effect size range when more than two effect sizes are reported.

Abbreviations: G = group; HR = hazard ratio; KQ = key question; n = number; NR = not reported; OR = odds ratio; RRR = relative risk reduction.

Of the three trials that assessed developmental outcomes, two assessed enhanced foster care interventions that applied specific strategies designed to promote children's development.^{117,119,121,122,124,126,128,139,141} For example, children participating in Multidimensional Foster Care for Preschoolers received services from a behavioral specialist working in preschool, child care, and home-based settings.¹⁴⁰ The third study, which reported cognitive processes as outcomes, was examining the efficacy of Attachment and Biobehavioral Catch-up.⁸⁵

We found no eligible studies that assessed school-based functioning, an anomaly given the pervasive emphasis on school readiness and performance in the U.S. educational system.

Key Question 2. Comparative Effectiveness of Interventions for Improving Child Welfare Outcomes

The summary of results for KQ 2 is also presented in Table 114. The outcomes for KQ 2 pertain to indicators particular to the child welfare system: safety (i.e., maltreatment recurrence), placement stability over time, and permanency (e.g., positive permanency arrangements such as reunification with the parent or adoption by the biological parent or another relative). The evidence for child welfare outcomes is relatively sparse compared with the research providing evidence on child well-being outcomes (KQ 1). One caveat is that this paucity of studies likely reflects our exclusion of (a) system-level interventions, such as differential response or systems-integration approaches, that have a central premise of improving child welfare status and (b) youth more than 14 years of age, because intervention research in the child welfare arena commonly targets families involved with Child Protective Services (CPS) regardless of the child's age or focuses specifically on adolescents.

Of the nine eligible trials reviewed for this KQ, five investigated the efficacy or effectiveness of parenting interventions, and four examined enhanced foster care interventions for safety, placement stability, or permanency outcomes. Four trials were not among those included in the results for KQ 1: three pertained to parenting interventions (Parent-Child Interaction Therapy [PCIT] that integrates a Motivational Intervention and SafeCare^{95,96,100} and one pertained to an enhanced foster care intervention (New Orleans Intervention).¹³⁰ All other trials included in KQ 2 evaluated interventions that were also reviewed under KQ 1.^{92,93,132,140,143,144} The studies analyzed for KQ 2 include two large effectiveness trials^{92,100}, one smaller effectiveness trial,⁹⁵ and one nonconcurrent cohort study.¹³⁰ The included studies targeted (1) maltreating families to prevent maltreatment recurrence^{93,95,96,100,130} or (2) foster parents to promote placement stability and positive permanency outcomes.^{92,140,143,144}

We found moderate SOE for one intervention that addressed child safety with maltreating parents. Based on the results of a large effectiveness RCT, the SafeCare home-visiting intervention resulted in lower rates of child maltreatment recidivism compared with usual care.¹⁰⁰ Results of a smaller effectiveness trial with maltreating parents that assessed safety outcomes for an adaptation of PCIT combined with a motivational intervention (referred to here as an adaptation package or PCIT-AP) showed a trend toward benefit in favor of the intervention over usual care consistent with findings from a previous efficacy trial of the same intervention.^{95,96} Additionally, PCIT-AP was more efficacious in reducing maltreatment

recurrence than an enhanced version that included individual services for the parent along with home visiting to support parenting behaviors learned in the clinical sessions.

Another large effectiveness trial focused on improved placement and permanency outcomes for children in foster care. This brief parent training intervention, known as Keeping Foster and Kinship Parents Trained and Supported (KEEP), resulted in improved permanency outcomes (e.g., reunification or adoption by a relative).⁹² Although there was insufficient evidence regarding the benefit of KEEP in reducing the risk of placement disruption (negative exits), the study found that the intervention mitigated the risk of placement changes associated with multiple previous placements. The KEEP trial offers moderate strength of evidence that a low-intensity approach can effectively promote positive permanency outcomes.

Several other interventions included in KQ 2 resulted in significant benefit compared with usual care, although the strength of the evidence was graded as low because of single trials. Two interventions with older children showed benefit in increasing placement stability and/or positive permanency outcomes. Fostering Healthy Futures, a high-intensity approach and the only child-focused intervention reviewed in KQ 2, resulted in fewer placement changes and increased permanency for youth ages 9 to 11 living in nonrelative foster care, increased reunification rates, and fewer placements in residential treatment center.¹³² Middle School Success, which targeted girls ages 10 to 12, also showed a significant benefit for reduced placement changes and also for decreased marijuana use, a major risk factor for placement change. A high-intensity intervention for young children, Multidimensional Treatment Foster Care for Preschoolers (MTFC-P), also showed benefit for positive permanency outcomes, measured in various ways: compared with usual care, MTFC-P resulted in fewer permanent placement failures, a greater proportion of attempts at permanent placement resulting in successful placement, and a greater proportion of cases resulting in permanent placement compared with usual care. However, no benefit was found for MTFC-P in number of placement disruptions or time in foster care prior to placement disruption.^{92,140,143,144}

Another multimodal approach, referred to as the New Orleans Intervention, resulted in a significant reduction in the risk of child recidivism among infants and toddlers in CPS custody and placed in foster care. This study also found reduced risk of maternal recidivism for subsequent children among mothers whose parental rights were terminated. This intensive and individualized approach increased termination of parental rights and decreased reunification between the child and his or her biological caregiver. The study authors suggested that the increased scrutiny afforded by the intensive intervention may have contributed to these permanency outcomes. Ideally, a positive outcome for adjudicated children involves reunification with a rehabilitated parent wherein the risks to safety and child well-being have been effectively mitigated through intervention. However, the termination of parental rights may have been a de facto protective outcome for this vulnerable population of maltreated, foster care children.

We found insufficient evidence to draw conclusions regarding the effectiveness of a home visiting intervention in promoting child welfare outcomes. The approach was derived from an existing intervention that had been developed originally as a preventive approach (i.e., an intervention that was not designed to prevent maltreatment recurrence in families where abuse or neglect had already occurred). Although maltreated children and those at risk for maltreatment have similar risk profiles, these findings suggest there may be important distinctions not yet fully understood in terms of clinical need.

Key Question 3. Comparative Effectiveness of Interventions With Different Characteristics

Several treatment characteristics were identified a priori for this KQ: modality (i.e., service delivery format), theoretical orientation, and type of service delivery setting. We found three trials relevant to KQ 3, all included comparisons that pertained to theoretical orientation.^{77-79,81-83,85,108} We found no studies that compared the efficacy or effectiveness of interventions delivered in different settings. We also found no studies in which the design or methods clearly indicated that modality (i.e., service delivery format) was a comparison of interest, and our team carefully avoided excessive interpretation to make a study “fit” with this KQ.

We were able to identify two interventions for which the theoretical orientation was clearly differentiated across experimental and control conditions. Meaningful contrasts were elusive due to the eclectic nature of the interventions we reviewed, with the majority of interventions drawn from multiple or unspecified theoretical bases, and minimal discussion of the therapeutic underpinnings by study authors. In cases where the comparator was a derived approach, it was difficult to ascertain the degree to which the original model’s theoretical orientation was maintained or implemented. For example, the CPP studies reported using a nurse home visitation model that has been described by the intervention developer as aiming to enhance early attachment among its other intervention targets.¹⁹² Our a priori focus on theoretical orientation did not intentionally aim to elevate treatments with a unifying theory over multiply determined approaches; yet it was difficult to interpret results comparing eclectic approaches. Taken together, these many challenges resulted in our including only two interventions in KQ 3: Attachment and Biobehavioral Catch-up (ABC) compared with a didactic, nonrelationship-based approach and Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) compared with psychodynamic child-centered treatment. The trials all showed benefit in favor of the experimental intervention’s theoretical approach. However, it should be noted that the comparator in the case of the ABC trials was not a bona fide alternative therapy designed to address child attachment or child emotional well-being but a derived approach that targeted only developmental skills (e.g., cognitive, language).

The intervention characteristics specified for KQ 3 were identified a priori following the approach of previous systematic reviews conducted by Agency for Healthcare Research and Quality (AHRQ) Evidence-based Practice Centers. They were selected because of their cost and treatment implications and to build on previous systematic reviews with maltreated children that examined intervention effectiveness by therapy type.^{145,146,182} However, the difficulty we encountered in carrying out KQ 3, namely the paucity of relevant contrasts, suggests a need for a qualitative analysis of the literature to identify treatment characteristics that are relevant to and useful for the field. Although an ad hoc analysis was beyond the scope of this review, through our immersion in this literature we noted the distinction between and unequal attention paid to specific techniques (e.g., intervention-specific strategies and content) in relation to factors that may be common across interventions at the level of client-therapist interactions (e.g., therapeutic relationship, personal characteristics of therapist and patient, engagement). The latter may be essential to understanding treatment efficacy or effectiveness.¹⁸³⁻¹⁸⁵ Thus, explicitly attending to differentiating and common treatment characteristics in the scientific literature is one important area for future research.

Key Question 4. Comparison of Intervention Effectiveness for Improving Child Well-Being or Child Welfare Outcomes in Population Subgroups

KQ 4 summarized the comparative effectiveness of interventions for different child and caregiver subgroups. All trials analyzed for this KQ were also examined in either or both KQ 1 and KQ 2. Table 115 presents the summary of results for KQ 4. The table presents the SOE and also indicates with which subgroup population(s) the intervention was evaluated; many interventions pertained to multiple subgroups.

Table 115. KQ 4 summary

Subgroup/Intervention (G1)	Comparison (G2)	Mental and Behavioral Health	Caregiver-Child Relationship	Development	Safety	Placement stability	Permanency
Age: Early Childhood	-	-	-	-	-	-	-
Attachment and Biobehavioral Catch-up	Active control	L	L	L	-	-	-
Attachment and Biobehavioral Catch-up	Inactive control	L	L	-	-	-	-
Attachment-based Intervention	Usual care		L	-	-	-	-
Bucharest Early Intervention Project	Usual care	L	L	L	-	-	-
Child-Parent Psychotherapy	Usual care		L	-	-	-	-
Multidimensional Treatment Foster Care for Preschoolers	Usual care	L	L	L	-	L	-
New Orleans Intervention	Usual care	-	-	-	L	-	L, G1<G2
SafeCare	Usual care	-	-	-	M	-	-
Age: Middle Childhood	-	-	-	-	-	-	-
Fostering Healthy Futures	Inactive control	L	-	-	-	L	L
Age: Early adolescence	-	-	-	-	-	-	-
Middle School Success	Usual care	L	-	-	-	L	-
Sex: Females	-	-	-	-	-	-	-
Group Psychotherapy for Sexual Abused Girls	Active control	L	-	-	-	-	-
Group Treatment Program for Sexual Abuse	Inactive control	L	-	-	-	-	-
Type of Maltreatment: Neglect	-	-	-	-	-	-	-
Bucharest Early Intervention Project	Usual care	L	L	L	-	-	-
SafeCare	Usual care	-	-	-	M	-	-

Table 115. KQ 4 summary (continued)

Subgroup/Intervention (G1)	Comparison (G2)	Mental and Behavioral Health	Caregiver-Child Relationship	Development	Safety	Placement stability	Permanency
Type of Maltreatment: Physical abuse	-	-	-	-	-	-	-
Combined Parent-Child Cognitive Behavioral Therapy	Active control	L	-	-	-	-	-
Parent-Child Interaction Therapy Adaptation Package	Usual care	-	-	-	L	-	-
Type of Maltreatment: Sexual abuse	-	-	-	-	-	-	-
Group Psychotherapy for Sexual Abused Girls	Active control	L	-	-	-	-	-
Group Treatment Program for Sexual Abuse	Inactive control	L	-	-	-	-	-
Trauma-focused Cognitive Behavioral Therapy	Active control	L	L	-	-	-	-
Presence of Mental or Behavioral Problems	-	-	-	-	-	-	-
Combined Parent-Child Cognitive Behavioral Therapy	Active control	L	-	-	-	-	-
Group Psychotherapy for Sexual Abused Girls	Active control	L, G1<G2	-	-	-	-	-
Group Treatment Program for Sexual Abuse	Inactive control	L	-	-	-	-	-
Trauma-focused Cognitive Behavioral Therapy	Active control	L	L	-	-	-	-
Caregiving Context: Maltreating parent	-	-	-	-	-	-	-
Attachment and Biobehavioral Catch-up	Active control	L	L	-	-	-	-
Attachment-based Intervention	Usual care	-	L	-	-	-	-
Child-Parent Psychotherapy	Usual care	-	L	-	-	-	-
Combined Parent-Child Cognitive Behavioral Therapy	Active control	L		-	-	-	-
Incredible Years Adaptation for Neglecting Parents	Inactive control	L	L	-	-	-	-
New Orleans Intervention	Usual care	-	-	-	L	-	L, G1<G2
Parent-Child Interaction Therapy Adaptation Package	Usual care	-	-	-	L	-	-
Project Support	Usual care	-	-	-	-	-	-
SafeCare	Usual care	-	-	-	M	-	-
Caregiving Context: Foster Parent	-	-	-	-	-	-	-
Attachment and Biobehavioral Catch-up	Active control	L	L	L	-	-	-
Attachment and Biobehavioral Catch-up	Inactive control	L	L		-	-	-
Bucharest Early Intervention Project	Usual care	L	L	L	-	-	-
Keeping Foster and Kinship Parents Trained and Supported	Usual care	M	M	-	-	-	M

Table 115. KQ 4 summary (continued)

Subgroup/Intervention (G1)	Comparison (G2)	Mental and Behavioral Health	Caregiver-Child Relationship	Development	Safety	Placement stability	Permanency
Middle School Success	Usual care	L	-	-	-	L	-
Multidimensional Treatment Foster Care for Preschoolers	Usual care	L	L	L		L	-

Abbreviations: G = group; KQ = key question; L = low; M = moderate

For child subgroups, we summarized the evidence for age and sex, maltreatment type, and the presence of mental or behavioral health problems. For caregiver subgroups, we summarized the evidence for children and their maltreating parents and children and the foster or kinship parents. No studies eligible for inclusion focused on children in residential care or children who had been adopted from foster care. We a priori had identified other salient child and caregiver characteristics as subgroups to examine; however, we identified no eligible studies for these additional areas: (a) caregiver mental health problems, substance abuse, domestic violence, and sociodemographic subpopulations and (b) severity of maltreatment and children with special needs (e.g., prenatal substance exposure). It was particularly notable that we could not identify studies for inclusion in this KQ that attended to race or ethnicity, given the attention to disproportionality in the child welfare arena. We also did not find any eligible studies that explicitly focused on these subgroups or stratified findings by these subgroups, so they are not represented in the results for KQ 4. A number of studies excluded parents with active substance abuse or mental illness and children with documented developmental disabilities.

In sum, the results for KQ 4 provide readers with a roadmap listing interventions for different subgroups for which there is comparative effectiveness research showing low or moderate SOE. These results also point out the substantive gaps in the existing evidence base for addressing the question *for what child and/or caregiver characteristics do interventions have impact or the most impact?* This gap largely reflects the paucity of studies that could identify moderators or treatment response due to small sample sizes.

Key Question 5. Comparative Effectiveness of Interventions With Children Exposed to Maltreatment for Engaging Children and/or Caregivers in Treatment

We identified three trials in the literature relevant to KQ 5, which assessed the comparative effectiveness of a motivational intervention designed to increase maltreating parents' engagement and retention in a parenting intervention. The motivational intervention was a 6-week group-based motivational orientation to parenting services for families referred by CPS for maltreatment.

The researchers compared PCIT combined with either the motivational intervention or service-as-usual CPS orientation for maltreating families referred for parenting services (see description of study design in the Results KQ 2 and KQ 5). The PCIT package that incorporated the motivational intervention yielded better parental treatment engagement relative to those assigned to receive PCIT with the standard CPS orientation. The strength of evidence for the motivational intervention was graded as moderate. In addition, PCIT plus the motivational intervention yielded improved treatment retention outcomes compared with PCIT plus the usual

CPS orientation. These findings are notable in light of the paucity of comparative research on participant engagement and retention.

Key Question 6. Adverse Events Associated With Interventions for Children Exposed to Maltreatment

We included a KQ examining adverse events because there is the potential for harms, even temporary, associated with treatment of children exposed to maltreatment. Such harms may take the form of retraumatization associated with gradual exposure or caregiver distress resulting from an increased awareness of the harm to a child exposed to abuse and neglect experiences. Only two trials reported an incident that the authors classified as an adverse event. Of those trials, only one reported active surveillance of adverse events, which was an inclusion criterion for KQ 6. This trial assessed the comparative efficacy of TF-CBT and nondirective supportive therapy (active control) for sexually-abused preschoolers. Fewer children in TF-CBT experienced the adverse event of removal from treatment because of persistent sexually inappropriate behavior involving another child or adult (low SOE).

Findings in Relationship to What Is Already Known

This review contributes to the literature by providing a comprehensive assessment of the range of interventions that have been evaluated for children exposed to maltreatment and who live in different caregiving and custodial contexts (i.e., with a maltreating parent, in formal or informal foster or kinship care). To the extent possible, we analyzed the efficacy or effectiveness of interventions for different child and caregiver subgroups in KQ 4 (as described above). Some reviews have limited their purview to specific interventions, to children exposed to specific types of maltreatment, or to other specific subgroups. For example, a 2007 Cochrane review examined the effects of cognitive behavioral training for foster parents in managing challenging child behavior.¹⁴⁷ Another review reported on the effectiveness of family therapy for children who had been physically abused.¹⁸⁶ Other reviews limited to particular intervention types or subgroups include a meta-analysis of the effectiveness of psychotherapy with sexually abused children,¹⁴⁵ a meta-analysis of parent training programs,¹⁴⁶ and a review of psychotherapeutic interventions with children in foster care.¹⁸⁷ Each contributes to knowledge and understanding of segments of this field, yet none attempt to examine a broader range of maltreated children, caregivers, interventions, and types of outcomes.

This review includes a comprehensive and developmentally informed set of child well-being outcomes. For example, we assessed caregiver-child relationship, developmental, and school-based functioning outcomes in addition to child mental and behavioral health outcomes. Our treatment of parenting ideations and behaviors as indicators of the caregiver-child relationship rather than “parent-level risk factors” emphasizes the transactional nature of a child’s development in the context of the caregiving environment.¹⁸⁸ We believe this is the first systematic review guided explicitly by such developmental consideration.

Overall, the findings presented in this report do not contradict but expand on and extend previously published findings. By following the rigorous and transparent CER methods of AHRQ’s Effective Health Care (EHC) program, our report provides a comprehensive assessment of the limitations of the evidence base and critical research, clinical, and policy issues that must be addressed to move the field forward.

Applicability

As noted, during the review process we systematically abstracted key factors that may affect the applicability of the evidence base. We identified these key factors a priori, using as our guidepost the definition of applicability provided by the AHRQ EHC program that defines applicability as “the extent to which the effects observed in published studies are likely to reflect the expected results when a specific intervention is applied to the population of interest under real-world conditions.” We explicitly sought to identify factors that related to each element of the population, interventions, comparators, outcomes, timing, and settings (PICOTS) framework that was used to guide the review. We present below the major issues that emerged from our analysis of factors affecting the applicability of the evidence base.

Population

The findings from this review must be understood in the context of treatment that occurs in recognition of the potential traumatogenic nature of maltreatment exposure, which begins from a different perspective than treatment in response to clinical symptoms and impairment. Accordingly, the evidence base primarily reflects two related contingents of maltreated children: those for whom child welfare involvement or custody represents a proxy for maltreatment and those for whom maltreatment is concluded based on clinical assessment. Each of the two approaches is subject to false negative conclusions, but at a broad level they together reflect the target population of children exposed to maltreatment. Among the studies evaluating parenting interventions with maltreating parents, exclusion criteria may have affected the applicability of the findings in important ways. These exclusion criteria encompass parents unwilling to participate in the intervention and study, parents with active substance use or abuse, parents with psychiatric impairment (e.g., severe depression, psychosis), and parents affected by a cognitive or neurological disability. Because these population characteristics represent baseline risks that are prevalent in the target population,⁵¹ particularly maternal depression,^{189,190} the applicability of the evidence to the complex presentations encountered in clinical settings is somewhat limited.

Intervention

The evidence base reflects the diverse range of intervention approaches in the field, which vary considerably in intensity. Those interventions with lower intensity (≤ 12 weekly sessions or approximately 3 months in duration) or moderate intensity (13 to 24 weekly sessions or approximately 6 months in duration) may fit well with the structural needs and expectations encountered in child welfare systems operating under the strict timeline set for permanency planning under the Adoption and Safe Families Act.¹⁹¹ The majority of studies delivered the intervention of interest under conditions more favorable than encountered in community settings. The discrepancy appeared most salient in terms of provider qualifications, as those in the experimental conditions tended to receive specialized training and close supervision from a highly specialized clinician, often the intervention developer. The interventions analyzed in the results all indicated that a manual was available. However, the interventions appear to vary considerably in the degree to which they attend to issues critical to effective implementation, particularly as relates to fidelity measurement and maintenance.

Comparators

Many the comparisons in the evidence base evaluated the efficacy or effectiveness of the intervention against an active control. Of these, 36 percent represented conventional practices in the field and 64 percent represented approaches that were derivations of other approaches. The derived approaches made assessment of applicability difficult because it was not clear whether they reflected the best alternative treatments in the field. On the contrary, in several cases the comparator was a modified version of an original model for which evidence of effectiveness exists in the scientific literature or did not appear to maintain core components of the original model with fidelity (the case in five trials).^{77-79,81-83,85,87,88,112} The derived approaches also included two that were developed to control for nonspecific aspects of the experimental intervention. As newly developed interventions, the extent to which each represented a “best” alternative treatment could not be determined.

Outcomes

The evidence base for the efficacy or effectiveness of parenting interventions in changing parenting behavior associated with maltreatment is limited by the reliance on parent self-report measures of behavioral or attitudinal change, often using only subscales of measures or measures with weak evidence of their validity to the study population. Although parent self-reports of parenting practices are important indices of the quality of the caregiver-child relationship and the risk of maltreatment recurrence, measurement of actual behavior change would strengthen the evidence of benefits.

Few parenting interventions with maltreating parents used an objective, observational measure of child attachment to measure change in the caregiver-child relationship. The most widely used and validated measure of attachment between a child and his or her parent (or primary caregiver) is a structured procedure in which the child experiences separations from and reunions with the parent that represent laboratory analogues of normative parent-child separations.¹⁸¹ This laboratory-based procedure, known as the “Strange Situation,” is the “measure of first choice for examining attachment intervention outcomes.”¹⁹² However, the validity of this measure has not been established for the foster care context, because a child in foster care may have been in a placement too briefly or experienced such disruption that a primary caregiving relationship with the foster parent would be premature at best. These measurement issues related to the caregiver-child relationship undermine the applicability of the evidence to the target population. In contrast, child mental and behavioral health outcomes, as assessed across the different types of interventions included in this review, were based on a narrow set of measures with established validity for the target population. However, very few studies used child report.^{107,131}

The child welfare outcomes reported in the included studies were based on data drawn primarily from child welfare agency records. This approach may offer important insights into the integration of treatment into child welfare systems but only to the extent that records objectively, accurately, and consistently report the relevant variables within a system and across regions and states. The duration of follow up to assess maltreatment recurrence (i.e., safety) was variable across studies, making it somewhat difficult to apply the findings to the already complex recurrence data in the State Child and Family Service Reviews (the data used by the Federal Government to monitor State child welfare programs in meeting safety, permanency, and family and child well-being outcomes).

The majority of studies included in KQ 1, regardless of intervention type, collected outcomes only at postintervention. When present, follow-up assessments rarely extended beyond 3 to 6 months after the intervention ended. Both short- and long-term improvements have important applicability to maltreated children, particularly children at risk for out-of-home placement and parents at risk of losing custody or parental rights unless the actions that brought their case to the attention of the child welfare system are addressed. For KQ 2, safety outcomes spanned much greater periods of time, although there was considerable variability in time to followup across studies assessing child recidivism.

Setting

Many of the studies were conducted in university- or community-based clinics, including organizations providing services for the child welfare system. Thus, they are generally, but not wholly, representative of the settings in which interventions are delivered in the field. The studies were predominantly conducted in the United States. Four studies were conducted in other Western countries: two in Canada and one in the United Kingdom. Although these other settings were also Western countries, differences in child welfare systems and health service systems may affect the applicability of the study findings. One study was conducted in Iran, and another other in Romania. The evidence from these latter studies is less broadly applicable, despite offering perspectives on caring for maltreated children in low- and middle-income countries and potentially informing intervention in appreciably underresourced areas.

Limitations of the Comparative Effectiveness Review

Our review required that included studies be of at least medium or low risk of bias and include comparators and pairwise comparisons as a basis for conclusions regarding effectiveness. The decision to emphasize certain aspects of study design resulted in the exclusion of evaluations of ongoing, highly adaptable programs that are widely used in the field but come with limited empirical support. This review did not limit interventions based on the ready availability of a manual or training to support effective implementation, although all of the studies included in the results referred to a manual or treatment program. Another limitation of the review relates to the issue of heterogeneity. A key tenet of an AHRQ review involves the effort to restrict sample heterogeneity in favor of generalizability. Our efforts in this regard resulted in exclusions that admittedly may have come at the cost of a more representative review. However, each exclusion decision was made with the intention of focusing the review and controlling for important sources of heterogeneity. For example, youth older than 14 years of age were excluded. We recognize that the decision to exclude older adolescents meant excluding a large body of evidence about widely used and well-respected interventions, such as, Multidimensional Treatment Foster Care,^{193,194} Multisystemic Therapy for Child Abuse and Neglect,^{195,196} and the Sanctuary Model[®].^{197,198} Although clearly a relevant population, the nature of adolescent development (e.g., increases in autonomy, independence, physical maturity) and the nature of caregiving during this period undergo significant changes and evolution. With some variation, maltreatment rates decrease with children's age with the highest rates among infants. Although rates tend to increase during early adolescence relative to elementary school years, they revert to their decline during mid-adolescence. We imposed the age cutoff in recognition of how maltreatment and its sequelae evolve across the development spectrum and shift in frequency as youth age.

Other exclusions pertained to type of intervention. We excluded evaluations of primary or secondary prevention, namely studies where maltreatment was not indicated or substantiated, families had no evident current involvement with CPS, or the description of the study population was too vague for a determination about maltreatment. However, despite this exclusion, the review encompasses an array of interventions that span a broad spectrum of development that includes infancy, early childhood, school age, and early adolescence. Systems-level interventions likewise were excluded to focus on more “clinical level” approaches at the child, parent, and family levels. Understanding how systems can effectively respond to maltreatment and how interventions can be effectively implemented within these complex systems is critically important. Systems approaches, such as differential response and solution-focused casework, are well accepted and widely used within child welfare and affect the work of related care systems. At the same time, these approaches and their evaluations were so diverse that they warranted a separate review.

Finally, perhaps the most difficult exclusion decision for this review pertained to children exposed to domestic violence. The exclusion was made in the interest of reducing clinical heterogeneity and also out of concern about the potential for readers to conflate domestic violence and maltreatment if they were combined in a single review. Despite the high concordance of domestic violence with physical and sexual abuse, emotional victimization, and neglect, the experience of witnessing domestic violence relative to that of being a direct victim of caregiver maltreatment may vary. Further, many jurisdictions classify exposure to domestic violence as distinct from maltreatment.

Even with these exclusions, we strongly acknowledge that this review encompasses a notably heterogeneous population with widely varying need for intervention. We were unable to account for the inherent clinical heterogeneity in the population of maltreated children whether in community or child welfare and foster care settings. Approximately 20 percent of children in foster care are removed from the home for reasons other than abuse or neglect. Reasons may involve exposure to risk rather than direct victimization of the child (e.g., prenatal drug exposure, parental substance abuse, domestic violence, unconfirmed maltreatment but in need of services).⁵¹

Limitations of the Evidence Base

This review applied stringent evidentiary standards to the still relatively new field of evidence-based mental health treatment for maltreated children whose backgrounds of victimization, ambivalence toward maltreating parents or caregivers, complex symptoms and functional impairments, and disruptions in care present extreme challenges to traditional research. We did not pursue a quantitative meta-analysis for this review because of the diversity in interventions, comparators, and outcomes measured in the literature. Specific limitations we encountered are described below.

Study Design and Methodology

Several issues related to design and methodology hampered the comparative review process. At a broad level, studies rarely distinguished themselves as either efficacy or effectiveness trials. This speaks to a serious issue in the field that contributes to variability in definitions of evidence-based practice and understanding of when practices are ready for dissemination.¹⁹⁹ At the level of intervention, studies infrequently undertook head-to-head comparisons with named active treatments; also, studies that used a usual-care comparator varied widely in the definition and

content of usual care. Regarding the former limitation, our systematic review found several instances where comparators were derived from commonly used interventions that included variations specific to the setting or the study. Overall, the active control treatments varied widely within and across studies and often lacked a clear treatment rationale and specificity about procedures. Such variations, particularly when unlabeled and untested for efficacy, make it difficult to arrive at conclusions regarding comparative effectiveness. Regarding “usual care” or “services as usual” as the control intervention, which was the case for the majority of studies reviewed, there is no standard for this type of control group in the field. Thus, usual care as the control represented a problematic comparator insofar as it is an ill-defined concept.

Studies either lacked or failed to report power analyses. Because the evidence base features many small studies, this omission hampered our ability to assess whether the absence of effect reflected lack of effectiveness or insufficient statistical power. The vulnerability of the population increases the urgency of the need to identify effective interventions (and weed out ineffective interventions). Adequately powered studies, coupled with clear statements of statistical power calculations, can help redirect resources and attention to the most promising interventions.

Our review also made clear that the very definition of maltreatment itself presents a barrier for researchers. Many of the included studies define maltreatment in terms of a child’s involvement with CPS or substantiation of alleged abuse. Neither criterion should be considered equivalent to the broader population of maltreated children because child welfare determinations are affected by community and state-level differences in how maltreatment is defined and reported. Additionally, differences in child welfare scrutiny for impoverished and minority families are well documented. The alternative of clinical assessment commonly seen in the literature often is vague in terms of how maltreatment is specifically operationalized and assessed, whether by informal clinical interview or standardized measures.

Studies were also often vague about their own inclusion criteria, which influenced our decision to restrict the review to children who had a reasonably clear history of maltreatment, rather than include at-risk or mixed samples that posed further definitional challenges. We did not encounter any study that stratified findings by children at risk or with known exposure. Many studies did not provide specific information about the type and number of events, timing, chronicity, context of children’s maltreatment, or any co-occurrence of other potentially traumatic events. Although common problems in the research literature, we recognize that the effort to improve clarity about aspects of maltreatment is fraught with difficulty. CPS records and clinical assessment protocols both are subject to inaccuracy, misidentification, and omission errors; both are only as accurate as the information that has observed, reported, or inferred.

Theoretical orientation proved a daunting area to examine in this review. Even when a treatment ascribed to a primary theory of change, rarely did an intervention adhere exclusively to that theory or related intervention strategies. Some “borrowed” facets of various orientations; others balanced one or more perspectives. For example, PCIT emphasizes the behavioral aspects of its approach yet also includes an explicitly relational phase based in attachment theory that precedes the focus on effective behavioral management. Additionally, many studies did not fully describe the key components of their interventions, making it difficult to know what actually occurred within treatment sessions and whether the therapist’s actions corresponded to the purported theory.

Study Measurement and Analysis

Many studies were reviewed but subsequently excluded because they did not employ well-established, reliable, and valid assessment measures. We required that outcome measures offer more than face validity; we looked for some evidence of construct or predictive validity. When such evidence was clearly lacking in the extant literature, we excluded the studies or the specific outcomes within a study. As a result, our review does not include all data from included studies.

Identification of child symptomatology was inconsistent across studies, for both younger and older children. Typically, intervention was based on an event, maltreatment or involvement with CPS, rather than symptomatic or functional impairment. This reflects a general tendency for systems to refer for mental health care based on events of concern, whereas families describe symptoms and functional problems as reasons for treatment. A further complication was that the approaches used to assess symptomatology and impairment varied and did not always involve commonly used, well-validated measures.

Many, far from all, studies compared baseline characteristics, usually demographics, between treatment and control groups. Ideally analyses should account for other potentially important differences at baseline (e.g., exposure to trauma, symptom patterns and levels, severity of maltreatment, family characteristics). Moreover, the majority of studies we reviewed failed to provide sufficient attention to differences in children's cognitive, social-emotional, and language development. As a result, there was limited evidence to assess treatment effectiveness or issues that affected treatment response by age group. The lack of developmental differentiation is consistent with other limitations that are, at least in part, sequelae of small samples that preclude subgroup analyses and examination of moderating and mediating effects.

A large number of studies exceeded our criteria for risk of attrition bias: total study attrition above 30 percent or differential attrition between the active treatment and control groups greater than 15 percent.²⁰⁰ We excluded several trials that admirably followed participants over a longer period (e.g., greater than 1 year) because too many of the participants were missing from the analysis of follow-up data.²⁰¹⁻²⁰⁶

Future Research Needs

The predominance of low SOE and inconsistent or no difference findings in the studies we reviewed calls for further research to resolve incongruous findings and improve our confidence that the evidence is free of error, accurate, and as representative as possible. A number of specific areas should be addressed in future research.

Head-to-Head Trials

The evidence base for effective interventions for maltreated children is composed primarily of single trials with relatively short-term results absent head-to-head studies comparing interventions of interest. At this juncture, additional comparative efficacy and effectiveness trials are needed to build the evidence for interventions with low SOE. When studies include multiple conditions, reporting of one-to-one (pairwise) comparisons is critical.^{110,207} Comparisons of bona fide interventions that are fully representative of alternative treatment options is another substantive gap to address.

Intervention Considerations

A gap in the current literature is comparative research with existing interventions that have an established evidence base of efficacy or effectiveness with other populations and rigorous testing of adaptations. Adaptations may exclude or substantially modify components of an original version, resulting in fundamental changes relative to the original intervention. Thus, research on adaptations demands particularly close attention on the part of the researcher to therapist- and participant-level characteristics and other factors (e.g., setting, timing). The paucity of relevant contrasts for KQ 3 suggests a need for a qualitative analysis of the literature to identify treatment characteristics that are relevant to and useful for the field. We noted the distinction between and unequal attention paid to specific techniques (e.g., intervention-specific strategies and content) in relation to factors that may be common across interventions at the level of client-therapist interactions (e.g., therapeutic relationship, personal characteristics of therapist and patient, engagement). The latter may be essential to understanding treatment efficacy or effectiveness and merits further attention.¹⁸³⁻¹⁸⁵

Assessment of Clinical Need

The use of common and validated measures for identifying symptomatology is a major omission undermining the strength of the evidence base. Greater coalescence around such measures will help future reviews generalize findings across studies and settings and create greater consensus in the field around effective and ineffective interventions by introducing common metrics. Additional research is particularly needed to determine the relative benefits of various interventions across age subgroups.

Outcomes

The use of well-established, reliable, and valid assessment measurement and more consistent use of measures is imperative for interpreting the precision and directness of outcomes. Future research is also needed in the area of longer-term outcomes, including duration of symptom remission or functional improvement, generalization of outcomes from one setting to another, outcome variability according to clinically heterogeneous subgroups, and subsequent retraumatization. An outcome that is particularly deserving of deeper assessment is the extent to which children involved in the child protective system achieve a meaningfully positive placement. Currently, permanency outcomes generally reflect study constraints rather than the desired outcome of a constant, stable relationship with a parent or caregiver who comes to love and accept responsibility for a maltreated child.

Research on Engagement/Retention

Another future research need is intensified attention to strategies that foster treatment and study retention. We were able to find only one comparative study for inclusion in this review relevant to the issue of engagement and retention. This is an area that has remained elusive for decades because of numerous barriers experienced by vulnerable families. Commitment of time and effort is not limited to participation in treatment sessions. It often includes time, effort, and cost for transportation; conflicting work schedules; child care for other siblings; and early established impressions about the responsiveness of the therapist and the potential benefit of treatment. Families where maltreatment has occurred or who are providing out-of-home care contend with a host of other challenges (e.g., poverty, familial conflict, requirements of child

welfare and other service systems) that can preclude their participating in interventions or research. These many issues similarly affect sustained participation in study assessments. One immediate next step in this area is building further research on motivational cointerventions, given the promising findings regarding PCIT combined with a motivational orientation.⁹⁵⁻⁹⁷ Future research could compare interventions in terms of retention or examine features of interventions associated with engagement and retention.

Study Design and Reporting

Researchers should review and use the CONSORT statement to ensure the greatest clarity in reporting of trials.²⁰⁸ Future studies need to be adequately powered and statistical power calculations presented. Trials in this field do not typically blind participants or providers, but future studies should make every effort to blind outcome assessors to reduce the risk of detection bias.

Statistical Considerations

Even with concerns about limited sample sizes and attrition, few studies in the literature we reviewed included an intention to treat (ITT) analysis. ITT analysis may not be useful when there is differential attrition across study conditions, as was often the case for the maltreatment studies we reviewed. However, in cases where there is not high differential attrition, ITT analysis helps avoid the error of incorrectly attributing effectiveness to an intervention that actually may result from underlying differences in the final study groups. More consistent use and clear reporting of ITT analysis would enhance the interpretability and generalizability of study findings. Other concerns related to statistical analysis and inferences pertain to the need to control for multiple comparisons and limit post-hoc analyses. Future studies should account for multiple comparisons and clearly state planned statistical analyses. In complex multifactorial interventions, planned statistical analyses should include the assessment of mediators and moderators.

Beyond these more common statistical issues, a more fundamental question that merits increased attention in future research is how scientists should approach probabilistic estimates of effects and how to express confidence in their findings. Across the scientific literature we reviewed, researchers used only a classical/frequentist approach to hypothesis testing that views probability as the likelihood of a given result being true or false with a null hypothesis rejected or accepted with a certain probability of an accurate conclusion or “true effect.” Relying on p-values to assess whether a research finding is true may be subject to inherent error associated with small sample sizes and extensive heterogeneity of design, definitions, and outcomes, among other considerations.²⁰⁹ Hence, the use of alternative statistical analyses, namely Bayesian methods, may be warranted in future research because of the complexity of the population and heterogeneity of clinical need.

Implementation and Sustainability Research

Finally, a major gap in the current evidence base is rigorous study of implementation and/or issues related to maintenance of an intervention. Fidelity to the intervention model was infrequently reported and sparse in detail. To address the twin challenges of a stressed population and tight reimbursement guidelines, successful interventions must be effective and feasible to implement and maintain. Issues that will inform transportability to general community settings, accessibility and utilization by maltreating families, or their effective use by implementing

clinicians should be more explicitly considered in future research. For example, future efficacy studies are needed on lower intensity interventions and factors that affect accessibility for this highly vulnerable population. Relatedly, there is a notable gap in attention to “dose” or how much of an intervention is needed to effect change that should be addressed in future research.

Another practical consideration for the development and testing of real-world interventions relates to the costs of service delivery (e.g., provider training, clinical effort, and practice infrastructure), service receipt (e.g., family transportation, child care, health care deductibles and coinsurance), and potential revenue (e.g., Medicaid, private insurance, public and private funders). With most mental health care based on service reimbursement, future research is clearly needed on the interplay of treatment model and structure, service definitions, utilization management, treatment authorization, and claims submission and authorization.

Implications for Research

The myriad methodological, conceptual, and operational challenges to clinical research with maltreated children and maltreating families, which led to the methodological and substantive gaps in the evidence base described above, cannot be overcome by individual, site-specific, time-limited studies largely conducted by the developers of interventions or single research teams. To move the science forward, there clearly is a need for extensive multisite collaboration. A research network, for example, would provide the platform for efficient and methodologically rigorous collaborative clinical trials. It would allow for large enough samples to examine moderators of treatment response and investigate subgroups for whom treatments are less, or more, effective.^{210,211} A clinical research network could be an extension of an existing structure or structures, such as the National Child Traumatic Stress Network.

A central and ongoing barrier to conducting rigorous research in this area is employing randomization or quasi-randomization procedures, because these designs raise thorny issues for clinicians and other stakeholders serving maltreated children and their families. Although the concerns are not unique to maltreatment research, community-based professionals may be, for example, reluctant to see their clientele randomized to a no intervention or usual care group that they perceive as less effective than the intervention under investigation. This dynamic plays out across clinical trials where community providers and clients may feel that a valuable treatment option, even if it is experimental, has been denied to them. This subsequently may foster differential study engagement and attrition. Again, a multisite collaborative could provide a powerful nexus for shared strategies and best practices that result in successful implementation of controlled research studies in this challenging field.

Implications for Clinical Practice

For clinicians, the stringent criteria of this CER may raise questions about its applicability for typical practice settings such as community mental health agencies, health centers, schools, and private practices. Faced with relatively few interventions meeting the criteria for greater SOE, there is a potential to conclude that this report has little relevance to a community provider. Clinicians are well aware of the complexity of direct service for maltreated children and for many other vulnerable populations who present with multiple comorbid diagnoses and where individual, family, and community risk factors, experiences of trauma and adversity, and barriers to treatment participation exist. Although there has been a groundswell of support for using evidence-based treatments, they are relatively new models that often are unfamiliar to a community practitioner. Additionally, community therapists do not have the luxury of treating

only clientele whose presentation accords to an evidence-based treatment. Nor can they await the fulfillment of calls for better research, for example, in the form of head-to-head comparisons of active treatments or designs that allow larger samples to address varied populations subgroups. Instead, and in this report, they are challenged to consider the relative evidence of one or another approach in a given clinical context.

Further, this report offers clinicians a synthesis of research limitations associated with widely used practices and point to factors clinicians might consider in their own formulations and treatment decisions. For example, the interventions highlighted as benefiting mental and behavioral health, caregiver-child relationships, child development, and child welfare status represent treatment selection priorities. Studies that were included yet found to have lesser scientific support may be second-line options or represent best available options for given predisposing maltreatment events or certain clinical presentations. Of course, selection from among the interventions in this review must be considered in light of clinical context (e.g., comorbidities, motivation for treatment, primary symptoms). Finally, providers will, no doubt, turn to other interventions. The selection criteria in this review may still guide that process. Clinicians may consider the extent to which their clientele are reflected in studies of a particular intervention (i.e., sample representativeness), the relevance of study outcomes (i.e., applicability), and the extent to which they are able to adopt a practice with strong attention to fidelity. Outcome findings in this review may assist clinicians to fine-tune outcomes to be expected from a particular approach, modality, or level of care. Based on this refined knowledge, expectations may be communicated to clients to facilitate engagement and positive, realistic expectations for change. These suggestions are but an early step toward improving the relevance of research to therapists and other providers, which is critical if standards of care are to improve rather than remain static.

A primary motive for clinicians involves their desire for effective work that benefits their clients and engenders a sense of competence, mastery, and satisfaction. Thus, in the face of such a limited base of evidence for interventions with maltreated children, this review may heighten clinicians' awareness and investment in sound implementation practices. These include attention, at both the provider and supervisor levels, to systematic treatment fidelity, barriers to implementation, and obstacles to sustainable practice.²¹² Attention to adoption and effective implementation of a new practice is crucial and depends on clinical training that is supported by adherence to a clear treatment manual, ongoing consultation in model application to clinical practice, and practice that is guided by an expert provider and trainer.

Implications for Policy

This report presents highly specific research that may not correspond readily to practices in real-world community settings. The two approaches for which there was strongest evidence based on effectiveness studies^{91,92,100} were each tested in only one trial, and the SOE for most interventions included in this review was low. Given the early stage of research in the field, we caution that this report should not be taken as a guide to the selection of specific approaches for wider dissemination. Rather, the central finding of this review for policymakers and payers is the relative scarcity of evidence to guide the field in meeting the needs of this vulnerable population of children.

Two implications for policymakers are immediately evident. First, there is an urgent need for collaborative clinical trials to move the field of child maltreatment intervention forward. A multisite research network is a powerful platform that could efficiently furnish collaborative

studies of sufficient quality and size to build a stronger evidence base for effective practice. The National Child Traumatic Stress Network offers an existing infrastructure that could be expanded to support and provide scientific leadership for collaborative multisite trials. Alternatively, or in addition, an existing clinical research network could be expanded or a new network formed to focus on child maltreatment intervention. Such initiatives will, in many respects, require a paradigm shift in funding to prioritize and adequately support complex research endeavors over single-site, small studies conducted by treatment developers or single research groups. It also will also require a recalibration of time frame expectations for study implementation with vulnerable populations and the creation of flexible funding mechanisms that seamlessly support the trajectory from efficacy to translation for rigorously examined interventions that show consistent, robust effects.

A second area where policymakers can have a major positive impact is in incentivizing higher quality program and administrative data that will both serve research needs and drive data-informed decision-making at the program and clinical levels. Program-record databases typically collect the minimal information pertinent to billing or other administrative needs and not necessarily case-outcome data. Field agencies that must compete for limited dollars to support their programs are rarely able to focus on systematic data or participate readily in rigorous research activities. The collection of implementation and outcome data is rarely incentivized within an agency or practice or in the form of enhanced payment rates from insurers. The end result, in a context of dwindling resources to support the cost of providing quality care, is disincentive for programs to engage in activity beyond what is specifically reimbursed.

Conclusions

Maltreatment intervention research, particularly comparative research, remains a relatively nascent field. Much of the research relies on small samples and has limited statistical power, so data cannot be stratified based on subgroups or considered in terms of potential mediators and moderators of effect (e.g., age, type and chronicity of maltreatment). It is critical to note that low or insufficient SOE is not equivalent to a judgment of an intervention as ineffective. Rather it reflects the justifiable state of affairs where many promising or widely used approaches have not been the subjects of empirical study. This review draws attention to the herculean efforts involved in conducting high-quality trials of mental health and psychosocial interventions, a challenge that is potentiated with the vulnerable, maltreated population that is the focus of this review.

Although several interventions emerged with evidence to support their efficacy or effectiveness, the strength of the evidence was low for the vast majority of outcomes. Consequently, our main finding was that the literature in this field is strikingly limited due to numerous substantive and methodological gaps. These limitations include (a) the predominance of single trials conducted by the treatment developers testing unique interventions that often employ strategies very similar to those of other approaches, (b) usual care or wait-list controls rather than head-to-head comparisons, (c) short-term outcomes, (d) inadequate reporting of attrition, and (e) wide heterogeneity in type and psychometric soundness of outcome measurement across studies.

Thus, this review serves as an urgent call for improving and building the evidence base for interventions to promote the well-being of maltreated children. A multisite research network is a powerful platform that could facilitate the conduct of large, methodologically rigorous

comparative efficacy and effectiveness trials that are needed to move the field forward. More broadly, a paradigm shift is required on the part of researchers and funders alike to galvanize the commitment and resources necessary for conducting collaborative clinical trials with these particularly vulnerable children and families.

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Appendix A. Literature Search Strategy

PubMed—Conducted 26 September 2011

Search	Most Recent Queries	Result
#1	Search "Child Abuse"[Mesh] OR "Child Welfare"[Mesh] OR "Infant Welfare"[Mesh] OR "Domestic Violence"[Mesh] OR "Foster Home Care"[Mesh]	55628
#2	Search "child abuse"[tiab] OR "child maltreatment"[tiab] OR "neglect"[tiab] OR "domestic violence"[tiab] OR "child welfare"[tiab] OR "foster care"[tiab] OR "kinship care"[tiab] OR "out of home care"[tiab] OR "out of home placement"[tiab] OR "looked after child"[tiab] OR "looked after young"[tiab] OR child protective service* OR physical abuse*	23738
#3	Search #1 OR #2	66583
#4	Search "Adolescent"[Mesh] OR "Child"[Mesh] OR "Infant"[Mesh]	2552525
#5	Search #3 AND #4	47627
#6	Search #5 Limits: Humans, English	41282
#7	Search ((#6) AND "1990/01/01"[Publication Date] : "2011/10/01"[Publication Date]) AND "0"[Publication Date] : "3000"[Publication Date]	33533
#8	Search "intervention"[tiab] OR "interventions"[tiab] OR "treatment"[tiab] OR "treatments"[tiab] OR "therapy"[tiab] OR "therapies"[tiab] OR "therapeutic"[tiab] OR "training"[tiab] OR "psychoeducation"[tiab] OR "program"[tiab] OR "programs"[tiab]	4040391
#9	Search "Intervention Studies"[Mesh]	4862
#10	Search "Psychotherapy"[Mesh]	134066
#11	Search "Complementary Therapies"[Mesh]	151249
#12	Search "Psychotropic Drugs"[Mesh]	114945
#13	Search Antidepressive Agents [Pharmacological Action]	109682
#14	Search Monoamine Oxidase Inhibitors [Pharmacological Action]	18977
#15	Search Anticonvulsants [Pharmacological Action]	120174
#16	Search Adrenergic Agents [Pharmacological Action]	301728
#17	Search Antipsychotic Agents [Pharmacological Action]	114583
#18	Search Tranquilizing Agents [Pharmacological Action]	168679
#19	Search "Benzodiazepines"[MeSH]	54507
#20	Search "Opiate Alkaloids"[Mesh]	69593
#21	Search "Anesthetics, Dissociative" [Pharmacological Action]	8329
#22	Search "Drug Therapy"[Mesh]	912570
#23	Search #7 AND (#8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22)	10202
#24	Search "Randomized Controlled Trial"[Publication Type] OR "Randomized Controlled Trials as Topic"[Mesh] OR "Single-Blind Method"[Mesh] OR "Double-Blind Method"[Mesh] OR "Random Allocation"[Mesh] OR "trial"[tiab]	611454
#25	Search "meta-analysis"[Publication Type] OR "meta-analysis as topic"[MeSH Terms] OR "meta-analysis"[All Fields]	50172
#26	Search "Comparative Study"[Publication Type] OR "comparative study"	1547696
#27	Search ("review"[Publication Type] AND "systematic"[tiab]) OR "systematic review"[All Fields] OR ("review literature as topic"[MeSH AND "systematic"[tiab])	42860
#28	Search "Cohort Studies"[Mesh]	1105472
#29	Search "Observation"[Mesh]	3766
#30	Search "Case-Control Studies"[Mesh]	512695
#31	Search #23 AND (#24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30)	2736

Update Search (May 4, 2012) N = 83

Cochrane—Conducted 26 September 2011

ID	Search	Hits
#1	"Child Abuse"[Mesh] OR "Child Welfare"[Mesh] OR "Infant Welfare"[Mesh] OR "Domestic Violence"[Mesh] OR "Foster Home Care"[Mesh]	995
#2	"child abuse"[tiab] OR "child maltreatment"[tiab] OR "neglect"[tiab] OR "domestic violence"[tiab] OR "child welfare"[tiab] OR "foster care"[tiab] OR "kinship care"[tiab] OR "out of home care"[tiab] OR "out of home placement"[tiab] OR "looked after child"[tiab] OR "looked after young"[tiab] OR child protective service* OR physical abuse*	2084
#3	(#1 OR #2)	2153
#4	"Adolescent"[Mesh] OR "Child"[Mesh] OR "Infant"[Mesh]	118022
#5	(#3 AND #4)	1378
#6	"intervention"[tiab] OR "interventions"[tiab] OR "treatment"[tiab] OR "treatments"[tiab] OR "therapy"[tiab] OR "therapies"[tiab] OR "therapeutic"[tiab] OR "training"[tiab] OR "psychoeducation"[tiab] OR "program"[tiab] OR "programs"[tiab]	446518
#7	"Intervention Studies"[Mesh]	2576
#8	"Psychotherapy"[Mesh]	6282
#9	"Complementary Therapies"[Mesh]	765
#10	"Antidepressive Agents"[Pharmacological Action]	4378
#11	"Monoamine Oxidase Inhibitors"[Pharmacological Action]	542
#12	"Anticonvulsants"[Pharmacological Action]	2055
#13	"Adrenergic Agents"[Pharmacological Action]	139
#14	"Antipsychotic Agents"[Pharmacological Action]	3254
#15	"Tranquilizing Agents"[Pharmacological Action]	524
#16	"Benzodiazepines"[MeSH]	2830
#17	"Opiate Alkaloids"[Mesh]	3
#18	"Anesthetics, Dissociative"[Pharmacological Action]	251
#19	"Psychotropic Drugs"[Mesh]	646
#20	"Drug Therapy"[Mesh]	182773
#21	(#5 AND (#6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20))	1171
#22	(#21), from 1990 to 2011	1128
#23	"Randomized Controlled Trial"[Publication Type] OR "Randomized Controlled Trials as Topic"[Mesh] OR "Single-Blind Method"[Mesh] OR "Double-Blind Method"[Mesh] OR "Random Allocation"[Mesh] OR "trial"[tiab]	463984
#24	"meta-analysis"[Publication Type] OR "meta-analysis as topic"[MeSH Terms] OR "meta-analysis"[All Fields]	17488
#25	"Comparative Study"[Publication Type] OR "comparative study"	136548
#26	("review"[Publication Type] AND "systematic"[tiab]) OR "systematic review"[All Fields] OR ("review literature as topic"[MeSH AND "systematic"[tiab])	27441
#27	"Cohort Studies"[Mesh]	6943
#28	"Observation"[Mesh]	15866
#29	"Case-Control Studies"[Mesh]	4102
#30	(#22 AND (#23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29))	1041
#31	"Humans"[Mesh] in Cochrane Reviews, Other Reviews, Clinical Trials, Methods Studies, Technology Assessments and Economic Evaluations	412691
#32	(#30 AND #31)	948

Update Search (May 4, 2012) N = 591

ISI Web of Science—Conducted 26 September 2011

Top of Form

Set	Results	Query
# 1	2,141	TS=("child maltreatment") Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=All Years Lemmatization=On
# 2	23,588	TS=(child) AND TS=(abuse*) Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=All Years Lemmatization=On
# 3	67,944	TS=(neglect) Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=All Years Lemmatization=On
# 4	7,383	TS=("domestic violence") Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=All Years Lemmatization=On
# 5	3,426	TS=("child welfare") Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=All Years Lemmatization=On
# 6	2,706	TS=("foster care") Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=All Years Lemmatization=On
# 7	295	TS=("kinship care") Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=All Years Lemmatization=On
# 8	347	TS=("out of home care") Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=All Years Lemmatization=On
# 9	220	TS=("out of home placement") Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=All Years Lemmatization=On
# 10	2	TS=("looked after child") Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=All Years Lemmatization=On
# 11	11	TS=("looked after young") Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=All Years Lemmatization=On
# 12	1,110	TS=(child protective service*) Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=All Years Lemmatization=On
# 13	10,826	TS=(physical abuse*) Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=All Years Lemmatization=On
# 14	104,550	#13 OR #12 OR #11 OR #10 OR #9 OR #8 OR #7 OR #6 OR #5 OR #4 OR #3 OR #2 OR #1 Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=All Years Lemmatization=On
# 15	2,374,692	TS=("treatment") OR TS=("treatments") Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=All Years Lemmatization=On
# 16	396,759	TS=("intervention") OR TS=("interventions") Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=All Years Lemmatization=On
# 17	2,071,928	TS=("therapy") OR TS=("therapies") OR TS=("therapeutic") OR TS=("training") OR TS=("psychoeducation") OR TS=("program") OR TS=("programs") Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=All Years Lemmatization=On

Set	Results	Query
# 18	23,048	(TS=(Psychotherapy)) AND Language=(English) Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=1990-2011 Lemmatization=On
# 19	3,577,518	#18 OR #17 OR #16 OR #15 Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=1990-2011 Lemmatization=On
# 20	23,003	#19 AND #14 Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=1990-2011 Lemmatization=On
# 21	92,092	(#14) AND Language=(English) Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=1990-2011 Lemmatization=On
# 22	1,439	(#14) AND Language=(English) Refined by: Web of Science Categories=(PHARMACOLOGY PHARMACY OR MEDICINE RESEARCH EXPERIMENTAL) Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=1990-2011 Lemmatization=On
# 23	23,741	#22 OR #20 Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=1990-2011 Lemmatization=On
# 24	933,961	(TS=(child*) OR TS=(youth) OR TS=(baby) OR TS=(adolescent) OR TS=(teen) OR TS=(teenager) OR TS=(toddler) OR TS=(Infant)) AND Language=(English) Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=1990-2011 Lemmatization=On
# 25	11,218	#24 AND #23 Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=1990-2011 Lemmatization=On
# 26	10,701	#24 AND #23 Refined by: Document Type=(ARTICLE OR REVIEW) Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=1990-2011 Lemmatization=On
# 27	338,451	(TS=("systematic review") OR TS=("randomized controlled trial") OR TS=(observational) OR TS=("cohort study") OR TS=("Comparative study") OR TS=("meta-analysis") OR TS=("Case Control")) AND Language=(English) Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=1990-2011 Lemmatization=On
# 28	640	#27 AND #26 Databases=SCI-EXPANDED, SSCI, A&HCI Timespan=1990-2011 Lemmatization=On

Bottom of Form

Update Search (May 4, 2012) N = 125

PsycINFO—Conducted 29 September 2011

#	Query	Results
S27	S25 or S26	2431
S26	S12 Limiters - Publication Year from: 1990-2011; Publication Type: All Journals; English; Language: English; Age Groups: Childhood (birth-12 yrs), Neonatal (birth-1 mo), Infancy (2-23 mo), Preschool Age (2-5 yrs), School Age (6-12 yrs), Adolescence (13-17 yrs); Population Group: Human; Document Type: Journal Article; Methodology: CLINICAL CASE STUDY, -Experimental Replication, -Followup Study, -Longitudinal Study, ---Prospective Study, ---Retrospective Study, -Systematic Review, -Meta Analysis, -Qualitative Study, -Quantitative Study, TREATMENT OUTCOME/CLINICAL TRIAL; Exclude Dissertations Search modes - Boolean/Phrase	2316
S25	S12 and S24 Limiters - Publication Year from: 1990-2011; Publication Type: All Journals; English; Language: English; Age Groups: Childhood (birth-12 yrs), Neonatal (birth-1 mo), Infancy (2-23 mo), Preschool Age (2-5 yrs), School Age (6-12 yrs), Adolescence (13-17 yrs); Population Group: Human; Exclude Dissertations Search modes - Boolean/Phrase	328
S24	S13 or S14 or S15 or S16 or S17 or S18 or S19 or S20 or S21 or S22 or S23	221984
S23	"case control"	4562
S22	Observation	88503
S21	cohort stud*	8303
S20	systematic review*	6441
S19	comparative Stud*	13619
S18	meta-analysis	12211
S17	trial	98113
S16	"Random Allocation"	119
S15	"Double-Blind Method"	46
S14	"Single-Blind Method"	1
S13	Randomized Controlled Trial*	10329
S12	S10 and S11	33327
S11	S6 or S7 or S8 or S9	1172138
S10	S1 or S2 or S3 or S4 or S5	65781
S9	DE "Drugs" OR DE "Adrenergic Blocking Drugs" OR DE "Adrenergic Drugs" OR DE "Alcohols" OR DE "Alkaloids" OR DE "Amines" OR DE "Analgesic Drugs" OR DE "Anesthetic Drugs" OR DE "Anti Inflammatory Drugs" OR DE "Antiandrogens" OR DE "Antibiotics" OR DE "Anticoagulant Drugs" OR DE "Anticonvulsive Drugs" OR DE "Antidepressant Drugs" OR DE "Antiemetic Drugs" OR DE "Antiestrogens" OR DE "Antihistaminic Drugs" OR DE "Antihypertensive Drugs" OR DE "Antineoplastic Drugs" OR DE "Antispasmodic Drugs" OR DE "Antitremor Drugs" OR DE "Antitubercular Drugs" OR DE "Antiviral Drugs" OR DE "Appetite Depressing Drugs" OR DE "Barbiturates" OR DE "Benzodiazepines" OR DE "Bromides" OR DE "Cannabis" OR DE "Channel Blockers" OR DE "Cholinergic Blocking Drugs" OR DE "Cholinergic Drugs" OR DE "Cholinomimetic Drugs" OR DE "CNS Affecting Drugs" OR DE "Diuretics" OR DE "Dopamine Agonists" OR DE "Emetic Drugs" OR DE "Enzyme Inhibitors" OR DE "Enzymes" OR DE "Ergot Derivatives" OR DE "Ganglion Blocking Drugs" OR DE "Generic Drugs" OR DE "Hallucinogenic Drugs" OR DE "Heart Rate Affecting Drugs" OR DE "Hypnotic Drugs" OR DE "Muscle Relaxing Drugs" OR DE "Narcotic Agonists" OR DE "Narcotic Antagonists" OR DE "Narcotic Drugs" OR DE "Neurotransmitter Uptake Inhibitors" OR DE "Nonprescription Drugs" OR DE "Nootropic Drugs" OR DE "Performance Enhancing Drugs" OR DE "Prescription Drugs" OR DE "Psychotomimetic Drugs" OR DE "Respiration Stimulating Drugs" OR DE "Sedatives" OR DE "Serotonin Agonists" OR DE "Serotonin Antagonists" OR DE "Statins" OR DE "Steroids" OR DE "Sympatholytic Drugs" OR DE "Sympathomimetic Drugs" OR DE "Thimerosal" OR DE "Tranquilizing Drugs" OR DE "Vasoconstrictor Drugs" OR DE "Vasodilator Drugs"	81289

#	Query	Results
S8	DE "Alternative Medicine" OR DE "Acupuncture" OR DE "Aromatherapy" OR DE "Faith Healing" OR DE "Folk Medicine"	5000
S7	DE "Psychotherapy" OR DE "Adlerian Psychotherapy" OR DE "Adolescent Psychotherapy" OR DE "Analytical Psychotherapy" OR DE "Autogenic Training" OR DE "Behavior Therapy" OR DE "Brief Psychotherapy" OR DE "Child Psychotherapy" OR DE "Client Centered Therapy" OR DE "Cognitive Behavior Therapy" OR DE "Conversion Therapy" OR DE "Eclectic Psychotherapy" OR DE "Emotion Focused Therapy" OR DE "Existential Therapy" OR DE "Experiential Psychotherapy" OR DE "Expressive Psychotherapy" OR DE "Eye Movement Desensitization Therapy" OR DE "Feminist Therapy" OR DE "Geriatric Psychotherapy" OR DE "Gestalt Therapy" OR DE "Group Psychotherapy" OR DE "Guided Imagery" OR DE "Humanistic Psychotherapy" OR DE "Hypnotherapy" OR DE "Individual Psychotherapy" OR DE "Insight Therapy" OR DE "Integrative Psychotherapy" OR DE "Interpersonal Psychotherapy" OR DE "Logotherapy" OR DE "Narrative Therapy" OR DE "Persuasion Therapy" OR DE "Primal Therapy" OR DE "Psychoanalysis" OR DE "Psychodrama" OR DE "Psychodynamic Psychotherapy" OR DE "Psychotherapeutic Counseling" OR DE "Rational Emotive Behavior Therapy" OR DE "Reality Therapy" OR DE "Relationship Therapy" OR DE "Solution Focused Therapy" OR DE "Supportive Psychotherapy" OR DE "Transactional Analysis"	131427
S6	"intervention" OR "interventions" OR "treatment" OR "treatments" OR "therapy" OR "therapies" OR "therapeutic" OR "training" OR "psychoeducation" OR "program" OR "programs"	1119024
S5	"child abuse" OR "child maltreatment" OR "neglect" OR "domestic violence" OR "child welfare" OR "foster care" OR "kinship care" OR "out of home care" OR "out of home placement" OR "looked after child" OR "looked after young" OR child protective service* OR physical abuse*	65763
S4	DE "Foster Care"	3234
S3	DE "Domestic Violence"	7813
S2	DE "Child Welfare"	4750
S1	DE "Child Abuse" OR DE "Battered Child Syndrome"	20171

Update Search (May 4, 2012) N = 149

Appendix B. Full Text Review Form

Author Last name, year:
Does this study assess the effects of an intervention? • Yes • No
Are ALL participants in the population of interest? OR Is there a sub-group of participants relevant and with outcome data stratified accordingly? • Yes • No
Does the study include an intervention of interest? • Yes • No
Does this study include a comparison of interest? • Yes • No
Does the study include outcomes relevant to 1 or more key questions? • Yes • No
Which best describes the study design? • Randomized controlled trial (RCT) • Non-randomized controlled trial (NCT) • Prospective cohort • Retrospective cohort • Case-control • Nested case-control • Systematic Review • Something else
Is the sample size ≥ 10 • Yes • No

Appendix C. Full Text Review Excludes

Wrong Publication Type (N=100)

1. Al Eissa M, Almuneef M. Child abuse and neglect in Saudi Arabia: journey of recognition to implementation of national prevention strategies. *Child Abuse Negl.* 2010 Jan;34(1):28-33. PMID: 20092895.
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Wrong Population (N=203)

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Appendix D. Risk of Bias Tables

Table D-1. Risk of bias assessment questions

Abbreviated Criteria in Table	Full Question	Type of Bias Assessed
Similar at baseline:	Were groups similar at baseline?	Selection bias
Fidelity:	Were measures taken to ensure intervention fidelity?	Performance bias
Assessor blinded	Were outcome assessors unaware of which intervention the participants received (i.e., blinded)?	Detection bias
All outcomes included:	Are all prespecified outcomes reported in the results?	Reporting bias
Measures equally applied	Were outcome measures equally applied?	Detection bias
Attrition reported:	Do study authors report either attrition statistic or that all participants who started the study completed the study?	Attrition bias
Attrition $\geq 30\%$	What was the overall attrition for the study $\geq 30\%$?	Attrition bias
Differential attrition $\geq 15\%$	Was the differential attrition between groups $\geq 15\%$?	Attrition bias
Questions for RCTs Only Randomization Adequate	Was randomization adequate?	Selection bias
Allocation concealment	Was the intervention/treatment allocation concealed?	Selection bias
ITT analysis	Did investigators use an ITT analysis?	Attrition bias
Questions for Nonrandomized Trials and Observational Studies Prospective	Is the study design prospective?	Detection bias
Same source population	Were groups recruited from the same source population?	Selection bias
I/E criteria	Were inclusion and exclusion criteria equally applied in both groups?	Selection bias
Control for difference	Were differences between groups taken into account in the statistical analysis?	Confounding

Table D-2. Risk of bias rating summary

	Design	Similar at Baseline	Fidelity	Assessors Blind	All outcomes Included	Measure Equally Applied	Attrition Reported	Attrition >= 30%	Differential Attrition >= 15%	Randomization Adequate	Allocation Concealment	ITT Analysis	Prospective	Same Source Population	I/E Criteria	Control for Differences	Rating
Berliner, 1996 ¹	RCT	Y	Y	U	Y	Y	Y	Y	U	U	U	N	NA	NA	NA	NA	H
Bernard, 2012 ²	RCT	Y	Y	Y	Y	Y	N	U	U	U	U	U	NA	NA	NA	NA	M
Bos, 2009 ³	RCT	N	U	U	Y	Y	N	U	U	U	U	N	NA	NA	NA	NA	M
Bos, 2010 ⁴	RCT	Y	U	U	Y	Y	Y	N	N	U	U	Y	NA	NA	NA	NA	M
Bruce, 2009 ⁵	RCT	U	U	U	Y	Y	N	U	U	U	U	N	NA	NA	NA	NA	M
Celano, 1996 ⁶	RCT	Y	Y	Y	Y	Y	Y	Y	Y	U	U	N	NA	NA	NA	NA	H
Chaffin, 2004 ⁷	RCT	Y	Y	U	Y	Y	Y	U	U	U	U	Y	NA	NA	NA	NA	M
Chaffin, 2009 ⁸	RCT	Y	Y	U	Y	Y	Y	N	N	Y	U	Y	NA	NA	NA	NA	L
Chaffin, 2011 ⁹	RCT	Y	Y	U	Y	Y	Y	N	N	Y	U	Y	NA	NA	NA	NA	L
Chaffin, 2012 ¹⁰	RCT	Y	Y	Y	Y	Y	Y	N	N	U	U	N	NA	NA	NA	NA	L
Chamberlain, 2008 ¹¹	RCT	Y	Y	U	Y	Y	Y	N	U	U	U	N	NA	NA	NA	NA	M
Cicchetti, 2006 ¹²	RCT	U	Y	U	Y	Y	Y	N	N	U	U	Y	NA	NA	NA	NA	M
Cohen, 1996 ¹³	RCT	U	Y	U	Y	Y	Y	N	U	U	U	N	NA	NA	NA	NA	M
Cohen, 1997 ¹⁴	RCT	N	Y	U	Y	Y	Y	Y	U	Y	Y	N	NA	NA	NA	NA	H
Cohen, 2004 ¹⁵	RCT	Y	Y	Y	Y	Y	Y	N	N	U	U	Y	NA	NA	NA	NA	L
Deblinger, 2001 ¹⁶	RCT	Y	Y	N	Y	Y	Y	N	U	U	U	N	NA	NA	NA	NA	M
Deblinger, 2006 ¹⁷	RCT	U	Y	U	Y	Y	Y	Y	N	U	U	N	NA	NA	NA	NA	H
Dozier, unpublished A ¹⁸	RCT	Y	Y	Y	Y	Y	N	U	U	U	U	U	NA	NA	NA	NA	M
Dozier, unpublished B ¹⁹	RCT	U	Y	U	Y	Y	N	U	U	U	U	N	NA	NA	NA	NA	M
Dozier, 2006 ²⁰	RCT	Y	Y	Y	N	Y	N	U	U	U	U	U	NA	NA	NA	NA	M
Dozier, 2008 ²¹	RCT	N	Y	Y	Y	Y	N	U	U	U	U	N	NA	NA	NA	NA	M
Dozier, 2009 ²²	RCT	Y	Y	Y	Y	Y	N	U	U	U	U	N	NA	NA	NA	NA	M
Fisher, 2000 ²³	PC	N	U	U	Y	Y	N	U	U	NA	NA	NA	Y	N	N	N	H
Fisher, 2005 ²⁴	RCT	Y	Y	U	Y	Y	U	U	U	U	U	U	NA	NA	NA	NA	M
Fisher, 2007a ²⁵	RCT	Y	Y	U	Y	Y	U	U	U	U	U	U	NA	NA	NA	NA	M
Fisher, 2007b ²⁶	RCT	Y	U	Y	Y	Y	U	U	U	U	U	U	NA	NA	NA	NA	M
Fisher, 2008 ²⁷	RCT	Y	Y	Y	Y	Y	U	U	U	U	U	U	NA	NA	NA	NA	M
Fisher, 2009 ²⁸	RCT	N	Y	U	Y	Y	N	U	U	U	U	U	NA	NA	NA	NA	M
Fisher, 2011a ²⁹	RCT	Y	Y	U	Y	Y	Y	N	U	Y	U	N	NA	NA	NA	NA	M
Fisher, 2011b ³⁰	RCT	U	U	U	Y	U	Y	N	Y	U	U	N	NA	NA	NA	NA	H
Fox, 2011 ³¹	RCT	U	U	U	Y	Y	Y	N	N	U	U	N	NA	NA	NA	NA	M
Gershater-Molko, 2002 ³²	CC	U	U	U	Y	Y	NA	NA	NA	NA	NA	NA	N	N	U	N	H
Ghera, 2009 ³³	RCT	Y	U	Y	Y	Y	Y	N	N	U	U	Y	NA	NA	NA	NA	M
Grayston, 1995 ³⁴	PC	U	U	U	Y	Y	Y	N	Y	NA	NA	NA	Y	Y	Y	N	H
Jaberghaderi, 2004 ³⁵	RCT	Y	U	Y	Y	Y	Y	N	N	Y	N	N	NA	NA	NA	NA	M
Jinich, 1999 ³⁶	RCT	Y	Y	Y	Y	Y	Y	U	U	U	Y	N	NA	NA	NA	NA	M
Johnson, 2010 ³⁷	RCT	Y	U	U	Y	Y	Y	N	N	U	U	N	NA	NA	NA	NA	M
Jouriles, 2010 ³⁸	RCT	Y	Y	Y	Y	Y	Y	N	Y	Y	U	N	NA	NA	NA	NA	H
Kim, 2011 ³⁹	RCT	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	NA	NA	NA	NA	L
Leathers, 2011 ⁴⁰	PC	U	Y	U	Y	Y	Y	Y	Y	NA	NA	NA	Y	Y	U	Y	H
Letarte, 2010 ⁴¹	PC	Y	Y	U	Y	N	Y	N	Y	NA	NA	NA	Y	Y	Y	N	H
Lewis-Morrarty, 2012 ⁴²	RCT	Y	U	U	Y	U	N	U	U	U	N	N	NA	NA	NA	NA	M
Linares, 2006 ⁴³	RCT	N	Y	Y	Y	Y	Y	N	N	U	U	Y	NA	NA	NA	NA	L
MacMillain, 2005 ⁴⁴	RCT	Y	U	Y	Y	Y	Y	N	N	Y	Y	Y	NA	NA	NA	NA	L

	Design	Similar at Baseline	Fidelity	Assessors Blind	All outcomes Included	Measure Equally Applied	Attrition Reported	Attrition >= 30%	Differential Attrition >= 15%	Randomization Adequate	Allocation Concealment	ITT Analysis	Prospective	Same Source Population	I/E Criteria	Control for Differences	Rating
Marshall, 2008 ⁴⁵	RCT	Y	N	U	Y	Y	Y	U	U	U	U	Y	NA	NA	NA	NA	M
McDermott, 2012 ⁴⁶	RCT	U	U	U	Y	Y	Y	N	N	U	U	N	NA	NA	NA	NA	M
McGain, 1995 ⁴⁷	NCT	U	U	U	Y	Y	N	U	U	NA	NA	NA	Y	Y	U	N	M
McLaughlin, 2011 ⁴⁸	RCT	Y	U	U	Y	Y	Y	N	N	U	U	N	NA	NA	NA	NA	M
McLaughlin, 2012 ⁴⁹	RCT	Y	U	Y	Y	Y	Y	N	N	U	U	Y	NA	NA	NA	NA	M
Meezan, 1998a ⁵⁰	RCT	U	U	U	Y	Y	Y	Y	Y	U	U	N	NA	NA	NA	NA	H
Meezan, 1998b ⁵¹	RCT	U	U	U	Y	Y	Y	Y	Y	U	U	N	NA	NA	NA	NA	H
Moss, 2011 ⁵²	RCT	Y	Y	Y	Y	Y	Y	N	N	Y	U	N	NA	NA	NA	NA	M
Nelson, 2007 ⁵³	RCT	Y	U	U	Y	Y	Y	N	N	U	U	Y	NA	NA	NA	NA	M
Nilsen, 2007 ⁵⁴	PC	N	U	U	Y	Y	N	U	U	NA	NA	NA	Y	Y	N	N	H
Nolan, 2002 ⁵⁵	PC	Y	U	U	Y	Y	Y	N	Y	NA	NA	NA	Y	Y	U	N	H
Price, 2008 ⁵⁶	RCT	Y	Y	U	Y	Y	N	U	U	U	U	U	NA	NA	NA	NA	M
Reams, 1994 ⁵⁷	RCT	N	U	Y	Y	Y	N	U	U	U	U	U	NA	NA	NA	NA	H
Runyon, 2010 ⁵⁸	RCT	N	Y	Y	Y	Y	Y	N	N	Y	Y	N	NA	NA	NA	NA	M
Smith, 2011 ⁵⁹	RCT	Y	Y	Y	Y	Y	N	U	U	Y	Y	U	NA	NA	NA	NA	M
Smyke, 2010 ⁶⁰	RCT	Y	U	Y	Y	Y	Y	N	N	U	U	Y	NA	NA	NA	NA	M
Sprang, 2009 ⁶¹	RCT	Y	Y	N	Y	Y	Y	N	N	U	N	Y	NA	NA	NA	NA	M
Taussig, 2010 ⁶²	RCT	N	Y	Y	Y	Y	Y	N	N	Y	U	Y	NA	NA	NA	NA	L
Taussig, 2012 ⁶³	RCT	N	Y	Y	Y	Y	Y	N	N	Y	U	Y	NA	NA	NA	NA	L
Toth, 2002 ⁶⁴	RCT	N	Y	Y	Y	Y	Y	N	N	U	U	N	NA	NA	NA	NA	M
Trowell, 2002 ⁶⁵	RCT	Y	Y	U	N	Y	Y	N	N	U	U	Y	NA	NA	NA	NA	M
Weikert, 2012 ⁶⁶	PC	N	U	U	Y	Y	Y	N	U	NA	NA	NA	Y	Y	N	N	H
Windsor, 2011 ⁶⁷	RCT	U	U	U	Y	Y	N	U	U	U	U	Y	NA	NA	NA	NA	M
Zeanah, 2001 ⁶⁸	NCC	Y	U	N	Y	Y	N	U	U	NA	NA	NA	N	N	Y	Y	M
Zeanah, 2009 ⁶⁹	RCT	Y	U	U	Y	Y	Y	N	N	U	U	Y	NA	NA	NA	NA	M

Abbreviations: CC = case control; H = High risk of bias, M = Medium risk of bias, L = Low risk of bias; N = No, NA = Not Applicable, PC = prospective control; RCT = randomized controlled trial; U = Unknown (not reported or unclear), Y = Yes

Table D-3. Studies rated high risk of bias with primary reason for rating

Study	Design	Primary Reasons for High Risk of Bias Rating
Berliner et al., 1996 ¹	RCT	High overall attrition
Celano et al., 1996 ⁶	RCT	High overall attrition, differential attrition
Cohen et al., 1997 ¹⁴	RCT	High overall attrition
Deblinger et al., 2006, ¹⁷	RCT	High overall attrition
Fisher et al., 2000 ²³	PC	Differences in inclusion criteria
Fisher, 2011b ³⁰	RCT	Differential attrition
Grayston & De Luca, 1995 ³⁴	PC	Differential attrition
Gershater-Molko, 2002 ³²	CC	High potential for differences at baseline
Jouriles, 2010 ³⁸	RCT	Differential attrition
Leathers et al., 2011 ⁴⁰	RCT	High overall attrition, differential attrition
Letarte, 2010 ⁴¹	PC	Differential attrition
Meezan & O' Keefe, 1998 ⁵⁰	RCT	High overall attrition, differential attrition
Meezan & O' Keefe, 1998 ⁵¹	RCT	High overall attrition, differential attrition
Nilsen, 2007 ⁵⁴	PC	Differences in inclusion criteria
Nolan, 2002 ⁵⁵	PC	Differential attrition
Reams, 1994 ⁵⁷	RCT	Differences at baseline

Abbreviations: CC = case control; PC = prospective control; RCT = randomized controlled trial.

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Appendix E. Evidence Tables

Attachment and Biobehavioral Catch-Up

Table E-1. Attachment and biobehavioral catch-up, study characteristics

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Dozier, 2006 ¹	Two mid-Atlantic States, United States	NIMH	RCT	1, 3, 4	Presentation of preliminary data testing effectiveness of the Attachment and Biobehavioral Catch-up intervention designed to target relationship formation in young children in the foster care system.	G1: Attachment and Biobehavioral Catch-up G2: Developmental Education for Families	G1: NR G2: NR	Post Intervention (1 month following completion of the training)	Completion of the experimental or control intervention	NR
Dozier, 2008 ²	Two mid-Atlantic States, United States	NIMH	RCT	1, 3, 4	Assesses the effectiveness of a relational intervention intended to normalize HPA functioning (as measured by cortisol production) by enhancing children's ability to regulate physiology and behavior, among children in foster care.	G1: Attachment and Biobehavioral Catch-up G2: Developmental Education for Families	G1: NR G2: NR	Post Intervention (although exact timing not specified):	Completion of the experimental or control intervention	NR

Table E-1. Attachment and biobehavioral catch-up, study characteristics (continued)

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Dozier, 2009 ³	Two mid-Atlantic States, United States	NIMH	RCT; Sub-analysis	1, 3, 4	Presentation of preliminary findings of the effectiveness of the Attachment and Biobehavioral Catch-up intervention on children's attachment behaviors	G1: Attachment and Biobehavioral Catch-up G2: Developmental Education for Families	G1: NR G2: NR	Post Intervention was conducted at 1 month after intervention completion	Completion of the experimental or control intervention assessments	NR
Lewis-Morrarty, 2012 ⁴	Delaware, USA	NIMH	RCT	1, 3, 4	To evaluate the efficacy of ABC to help young children at high risk for or exposed to maltreatment develop organized attachments by changing parent behaviors related to overall sensitivity and frightening behaviors	G1: ABC G2: DEF	Children Overall: 37 G1: 17 G2: 20	Approximately 4 years (Baseline at 20 months, 10 weeks of txmt plus a month between the last session and post-txmt assessment, plus annual assessment through age of 6)	Parents enrolled in the Diversion from Foster Care Program because of identified needs and/or concerns that children were at risk	NR

Table E-1. Attachment and biobehavioral catch-up, study characteristics (continued)

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Bernard, 2012 ⁵ Dozier, unpublished A; ⁶ Dozier, unpublished B ⁷	Delaware, USA	NIH	RCT	1, 3, 4	To evaluate the efficacy of ABC to help young children at high risk for or exposed to maltreatment develop organized attachments by changing parent behaviors related to overall sensitivity and frightening behaviors	G1: ABC G2: DEF	Children Overall: 120 G1: 60 G2: 60	At least 14 weeks (10 weeks of txmt plus a month between the last session and post-txmt assessment)	Parents enrolled in the Diversion from Foster Care Program because of identified needs and/or concerns that children were at risk	NR

Table E-1. Attachment and biobehavioral catch-up, study characteristics (continued)

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Sprang, 2009 ⁸	KY, USA	NR	RCT	1, 4	To assess the efficacy of a relational intervention designed to help foster parents reinterpret behavioral cues in children who fail to elicit nurturing & decrease caregiver discomfort in providing nurturance	G1: Attachment & Biobehavioral Catchup Intervention (ABC) G2: Temporary wait-list	Parent-child dyads G1: 29 G2: 29	10 wks	Foster parents caring for children who had experienced severe maltreatment, disruptions in their primary attachment relationships during their early years, & diagnosed with attachment-related problems that threatened their foster placements; Children < 6 years of age; Neither the child nor caregiver had begun taking prescribed psychotropic drugs within 3 months before pretest data collection	Use of psychotropic medications during 3-mth prior to study period; Active, severe mental illness: active psychosis, mania, or if either child or caregiver was imminently suicidal/homicidal, and/or suffering from mental retardation & could not provide informed consent

Table E-2. Attachment and biobehavioral catch-up, population characteristics

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age Mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
Dozier, 2006 ¹	G1: Attachment and Biobehavioral Catch-up G2: Developmental Education for Families	G1: 19.01 mos (SD=9.64); 3.90-39.40 G2: 16.30 mos (SD=7.42); 3.60-33.60	Overall 50% female G1: NR G2: NR	% Caucasian Overall: 32% % African American Overall: 63% % Biracial Overall: 5%	NR	Foster Parents	NR	NR	NR	NR
Dozier, 2008 ²	G1: Attachment and Biobehavioral Catch-up G2: Developmental Education for Families	G1: 20.0 mos (SD=5.98); G2: 19.5 mos (SD=5.6) Overall Range: 15-24 mos	G1: 59% female G2: 43% female	% Caucasian G1: 17 % G2: 29% % African American G1: 81% G2: 66% % Asian American G1: 0 G2: 0	% Hispanic/Latino G1: 2 G2: 5	Foster Parents	NR	NR	NR	NR
Dozier, 2009 ³	G1: Attachment and Biobehavioral Catch-up G2: Developmental Education for Families	Overall: 18.9 mos (SD=1.8); 3.9-39.4 mos G1: NR G2: NR	Overall 50% female G1: NR G2: NR	% Caucasian Overall: 26% % African American Overall: 63% % Biracial Overall: 7%	% Hispanic/Latino Overall: 4%	Foster Parents	NR	NR	NR	NR

Table E-2. Attachment and biobehavioral catch-up, population characteristics (continued)

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age Mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
Lewis-Morrarty, 2012 ⁴	G1: ABC G2: DEF	In months Overall: 10.1 (6.0); Range: 1.7-21.4 G1: 19.2 (5.2) G2: 19.2 (5.8) Cog Flex & Theory of Mind M=60.3 (8.6), 4- 6 years G1: NR G2: NR	Overall: 49% G1: NR G2: NR	African-American Overall: 42.6% G1: NR G2: NR European American Overall: 36.1% G1: NR G2:NR Hispanic, Asian American, or Biracial Overall:21.3% G1: NR G2: NR	NR	Parents	NR	Overall: 100%	African-American Overall: 39.3% G1: NR G2: NR European American Overall: 57.4% G1: NR G2:NR Hispanic, Asian American, or Biracial Overall:3.3 % G1: NR G2: NR	See Race
Bernard, 2012 ⁵ Dozier, unpublished A; ⁶ Dozier, unpublished B ⁷	G1: ABC G2: DEF	In months Overall: 10.1 (6.0); Range: 1.7-21.4 G1: 19.2 (5.2) G2: 19.2 (5.8) Strange Sit. M=19.1 (5.5), 11.7-312.9 G1: NR G2: NR	Overall: 42% G1: 38% G2: 47%	African-American Overall: 61% G1: NR G2: NR White/non-Hispanic Overall: 15% G1: NR G2:NR Biracial Overall: 20% G1: NR G2: NR	Children minority Overall: NR G1: 93% G2: 92% White/Hispanic Overall: 11% G1: NR G2:NR	Parents	Overall: 28.4 (7.8); Range: 15.7-47.0 G1: 29.0 (7.3) G2: 29.0 (8.7)	Overall: 98% G1: NR G2: NR	African-American Overall: 61% G1: NR G2: NR White/non-Hispanic Overall: 15% G1: NR G2: NR Biracial Overall: 9% G1: NR G2: NR	Parent minority Overall: NR G1: 78% G2: 81% White/Hispanic Overall: 15% G1: NR G2: NR

Table E-2. Attachment and biobehavioral catch-up, population characteristics (continued)

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age Mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
Sprang, 2009 ⁸	G1: Attachment & Biobehavioral Catchup Intervention (ABC) G2: Temporary wait-list	Overall N: 42.5 months (18.6 mo.) G1: NR G2: NR	Overall N: 49% (excluding drop-outs) G1: NR G2: NR	NR	NR	Foster parents	Overall (n=53) 39.7 (6.45) Overall (n=58) 38.9 (sd nr) G1 Completers: 39.9 (6.09) G1: Drop-outs: 37.9 (6.32) G2 Completers: 35.5 (6.13) G2 drop-outs: 38.3 (5.21)	Overall (n=58): 81% G1 79% G2: 83%	% Caucasian (n=58) Total: 90% G1: 86% G2: 93% % African American (n=58) Total: 10.3% G1: 14% G2: 7%	NR

Table E-3. Attachment and biobehavioral catch-up, population clinical characteristics

First Author, Year	Comparison Groups	Maltreatment Type	Number of Exposures, Duration of Exposure, Number of CPS Referrals	Child Clinical Presentation, % With MH Symptoms or Behavior Problem, % Meeting a Diagnosis	Caregiver Presentation % With MH Symptoms, % Meeting a Diagnosis
Dozier, 2006 ¹	G1: Attachment and Biobehavioral Catch-up G2: Developmental Education for Families	NR	NR	NR	NR
Dozier, 2008 ²	G1: Attachment and Biobehavioral Catch-up G2: Developmental Education for Families	NR	NR	NR	NR
Dozier, 2009 ³	G1: Attachment and Biobehavioral Catch-up G2: Developmental Education for Families	NR	NR	NR	NR
Bernard, 2012 ⁵ Dozier, unpublished A; ⁶ Dozier, unpublished B ⁷	G1: Attachment and Biobehavioral Catch-up G2: Developmental Education for Families	Conditions reported most often included domestic violence, parental substance use, homelessness, and child neglect; access to families' records not available	NR	NR	NR

Table E-4. Attachment and biobehavioral catch-up, intervention characteristics

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
Sprang, 2009 ⁸	G1: Attachment & Biobehavioral Catchup Intervention (ABC) G2: Temporary wait-list	NR	NR	Attachment related problems (unspecified) Overall: 100%	NR	NR	NR
Dozier, 2006 ¹	G1: Attachment and Biobehavioral Catch-up G2: Developmental Education for Families	G1: 10 one hour weekly sessions G2: 10 one hour weekly sessions	G1: Caregiver G2: Caregiver	G1: Professional social worker or psychologists (≥ 5 years clinical experience with bachelor's or master's degree in social work or psychology) G2: Professional social worker or psychologists (≥ 5 years clinical experience with bachelor's or master's degree in social work or psychology)	G1: Yes G2: Yes	G1: Dyadic G2: Dyadic	G1: Foster home G2: Foster home

Table E-4. Attachment and biobehavioral catch-up, intervention characteristics (continued)

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
Dozier, 2008 ²	G1: Attachment and Biobehavioral Catch-up + Strange Situation G2: Developmental Education for Families + Strange Situation	G1: 10 one hour weekly sessions G2: 10 one hour weekly sessions	G1: Caregiver G2: Caregiver	G1: Professional social worker or psychologists (≥ 5 years clinical experience with bachelor's or master's degree in social work or psychology) G2: Professional social worker or psychologists (≥ 5 years clinical experience with bachelor's or master's degree in social work or psychology)	G1: Yes G2: Yes	G1: Dyadic G2: Dyadic	G1: Foster home G2: Foster home
Dozier, 2009 ³	G1: Attachment and Biobehavioral Catch-up G2: Developmental Education for Families	G1: 10 one hour weekly sessions G2: 10 one hour weekly sessions	G1: Caregiver G2: Caregiver	G1: Professional social worker or psychologists (≥ 5 years clinical experience with bachelor's or master's degree in social work or psychology) G2: Professional social worker or psychologists (≥ 5 years clinical experience with bachelor's or master's degree in social work or psychology)	G1: Yes G2: Yes	G1: Dyadic G2: Dyadic	G1: Foster home G2: Foster home

Table E-4. Attachment and biobehavioral catch-up, intervention characteristics (continued)

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
Bernard, 2012 ⁵ Dozier, unpublished A; ⁶ Dozier, unpublished B ⁷	G1: ABC G2: DEF	G1: 10 weekly, in home sessions G2: Same as G1	Parent & infant or toddler	Parent trainers who had experience with children and strong interpersonal skills	G1: Yes G2: Yes	G1: Individual (dyadic) G2: Individual (dyadic)	G1: Home or shelter if parents were homeless G2: Same as G1
Sprang, 2009 ⁸	G1: Attachment & Biobehavioral Catchup Intervention (ABC) G2: Temporary wait-list	G1: Unspecified number of sessions over a 10-week duration; Five 90-minute biweekly sessions with pre & post adoptive parents receiving services from the clinic G2: Five 90-minute biweekly sessions, with pre & post adoptive parents receiving clinic services	G1: Caregiver G2: Caregiver	G1: Four therapists (1 child psychiatrist, 1 psychiatric nurse practitioner, & 2 licensed clinical social workers) G2: NA	G1: Yes G2: NA	G1: Dyadic and monthly support groups G2: NA	G1: Caregivers' homes G2: Clinic

Table E-5. Attachment and biobehavioral catch-up, mental health outcomes

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Dozier, 2006 ¹	G1: Attachment and Biobehavioral Catch-up G2: Developmental Education for Families	Cortisol assay: collected saliva samples two times daily over a 2-day period at waking and before bed at home with compliance caps. Parent's Daily Report (PDR/IT): parent-report	AM Cortisol Baseline Mean (SD); Range G1: 0.41 (0.43); 0.00-1.97 G2: 0.80 (0.91); 0.00-3.00 PM Cortisol Baseline Mean (SD); Range G1: 0.12 (0.13); 0.00-0.58 G2: 0.42 (0.69); 0.00-2.65 Behavior Score Baseline Mean (SD); Range G1: 0.29 (0.16); 0.03-0.48 G2: 0.31 (0.15); 0.06-0.54	Analysis of Variance for Behavior Problems (between subjects) Intervention type, $F=0.14$, $p=0.71$ Child age, $F=3.06$, $p=0.09$ Intervention type x Child age, $F=4.75$, $p=0.04$ G1 reported fewer behavioral problems for toddlers than infants	Analysis of Variance for Cortisol Levels by Intervention Type Time of day within subjects, $F=29.04$, $p=0.00$ Time of day x Intervention type, $F=0.63$, $p=0.43$ Between subjects $F=4.55$, $p=0.04$ Comparisons between G1 and G2, Mean difference=-0.37 (0.11 SE), $p<0.001$	None
Dozier, 2008 ²	G1: Attachment and Biobehavioral Catch-up G2: Developmental Education for Families	Cortisol assay: collected saliva samples at first arrival at research lab, 15 min post strange situation and 30 min post strange situation	"None of the three groups showed a significant increase in cortisol in response to the Strange situation. Indeed, the slopes for all groups were in the negative direction" (p.852) Cortisol Slope G1: -0.04 G2: -0.11	Multilevel modeling coefficients of tx effects for salivary cortisol with DEF (tx control) as reference group	None	None

Table E-5. Attachment and biobehavioral catch-up, mental health outcomes (continued)

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Bernard, 2012 ⁵ Dozier, unpublished A ⁶ Dozier, unpublished B ⁷	G1: ABC G2: DEF	Strange Situation Waking level of cortisol AM Cortisol Level AM-PM Change in Diurnal Salivary Cortisol Tool Task	Bernard, 2012 Attachment categories total Secure 50 (42%) Avoidant 14 (12%) Resistant 3 (2%) Disorganized 53 (44%) Disorganized attachment Organized G1: 41 (68%) G2: 26 (43%) Disorganized G1: 19 (32%) G2: 34 (57%) X2 (1,120)=7.60, p<.01, all children, d=0.52 X2 (1, 95)=5.06, p<.05, <24m, d=0.47 X2 (1, 113)=8.58, p<.01, 2nd child in family excluded, d=0.57 Secure attachment Secure G1: 31 (52%) G2: 20 (33%) Insecure G1: 29 (48%) G2: 40 (67%) X2 (1,120)=4.15, p<.05, d=0.38 X2 (1,95)=1.85, p>.05, d=0.28, children<24m X2 (1,113)=4.85, p<.05, d=,0.44, 2nd child excluded	Dozier, Bernard, Bick & Gordon, unpublished; AM Cortisol Level G1>G2, p=0.01 AM-PM Change in Diurnal Salivary Cortisol G1>G2, p=0.05	Dozier, Bernard, Ross, et al., unpublished Mean Negative affect composite scores G1: -0.54 (SD=2.25) G2: 0.62 (SD=3.03) t (112)=-2.13, p<0.05 (2 nd child in family excluded) Mean Anger G1: 1.65 (SD=1.20) G2: 2.16 (SD=1.51) t (112)=-1.99, p<0.05 (2 nd child in family excluded) Mean Anger towards Caregiver G1: 1.54 (SD=1.02) G2: 2.12 (SD=1.72) t (112)=2.18, p<0.05 (2 nd child in family excluded) Mean Global Anger/Sadness G1: 1.54 (SD=0.91) G2: 1.89 (SD=0.96) t (111.7)=-2.00, p<0.05 (2nd child in family excluded)	None

Table E-5. Attachment and biobehavioral catch-up, mental health outcomes (continued)

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Sprang, 2009 ⁸	G1: Attachment & Biobehavioral Catchup Intervention (ABC) G2: Temporary wait-list	Child Abuse Potential Inventory (CAPI) CBCL-I (Internalizing subscale CBCL-E (Externalizing subscale Parenting Stress Index -Short form (PSI/SF)	CBCL-I subscale Baseline, Mean (SD) (Completers only/ ITT mean and sd NR) G1: 64.2 (11.2) G2: 68.28 (14.96) Endpoint, Mean (SD) (Completers only/ ITT mean and sd NR) G1: 45.39 (6.49) G2: 64.36 (15.34) Change score mean (SD) (Completers only/ ITT mean and sd NR) G1: -18.81 (NR) p=NR; G2: -3.92 (NR) p=NR Between group completers results, t=3.05, p=0.05 Within group ITT Both groups p=sig (NR) Between group ITT results, F= 9.72, p=0.01 Partial Eta Squared=0.436	CBCL-E subscale Baseline, Mean (SD) (Completers only/ ITT mean and sd NR) G1: 66.81 (12.42) G2: 49.13 (4.79) Endpoint, Mean (SD) (Completers only/ ITT mean and sd NR) G1: 49.13 (4.79) G2: 69.08 (14.82) Change score mean (SD) (Completers only/ ITT mean and sd NR) G1: -17.67 (NR) G2: -3.82 (NR) Between group completers results, t= 21.35, p=0.01 Within group ITT Both groups p=sig (NR) Between group ITT results, F= 17.09, p=0.001 Partial Eta Squared=0.511	None	None

Table E-6. Attachment and biobehavioral catch-up, healthy caregiver child relationship outcomes

First Author, Year	Comparison Groups	Measures	Caregiver-Child Relationship	Caregiver-Child Relationship (Part 2)	Caregiver-Child Relationship (Part 3)	Caregiver-Child Relationship (Part 4)
Dozier, 2009 ³	G1: Attachment and Biobehavioral Catch-up G2: Developmental Education for Families	Parent attachment diary - daily recording [checklist + brief narrative description] of infants' behaviors when distressed (e.g., hurt, scared, and separated) and in the presence of their primary caregiver. (caregiver self-report diary of child behaviors completed for a period of 3 days). Rated by two coders (interrater reliability for a subset (26%) of subjects was .88 for coding secure behaviors, 1.00 for coding avoidant behaviors, and .86 for coding resistant behaviors.	Parent Attachment Diary: Avoidant Baseline score mean (SD) G1: NR G2: NR Endpoint score mean (SD) G1: 0.12 (0.24) G2: 0.35 (0.41) Parent Attachment Diary: Secure Baseline score mean (SD) G1: NR G2: NR Endpoint score mean (SD) G1: 1.30 (0.30) G2: 1.18 (0.54)	Analysis of Variance for attachment behavior Avoidant: Between Groups: F=5.019 Sig.=0.030 Sum of Squares=0.586 Mean Square=0.586 Within Groups: Sum of Squares=5.142 Mean Square=0.117 Total: Sum of Squares=5.728 Secure: Between Groups: F=0.791 Sig.=0.379 Sum of Squares =0.154 Mean Square=0.154 Within Groups: Sum of Squares =8.594 Mean Square=0.195 Total: Sum of Squares=8.748	None	None

Table E-6. Attachment and biobehavioral catch-up, healthy caregiver child relationship outcomes (continued)

First Author, Year	Comparison Groups	Measures	Caregiver-Child Relationship	Caregiver-Child Relationship (Part 2)	Caregiver-Child Relationship (Part 3)	Caregiver-Child Relationship (Part 4)
Bernard, 2012 ⁵ Dozier, unpublished A, ⁶ Dozier, unpublished B ⁷	G1: Attachment and Biobehavioral Catch-up G2: Developmental Education for Families	Strange Situation	Attachment categories total Secure 50 (42%) Avoidant 14 (12%) Resistant 3 (2%) Disorganized 53 (44%)	Disorganized attachment Organized G1: 41 (68%) G2: 26 (43%) Disorganized G1: 19 (32%) G2: 34 (57%) X2 (1,120)=7.60, p<.01, all children, d=0.52 X2 (1, 95)=5.06, p<.05, <24m, d=0.47 X2 (1, 113)=8.58, p<.01, 2nd child in family excluded, d=0.57	Secure attachment Secure G1: 31 (52%) G2: 20 (33%) Insecure G1: 29 (48%) G2: 40 (67%) X2 (1,120)=4.15, p<.05, d=0.38 X2 (1,95)=1.85, p>.05, d=0.28, children<24m X2 (1,113)=4.85, p<.05, d=,0.44, 2nd child excluded	None

Table E-6. Attachment and biobehavioral catch-up, healthy caregiver child relationship outcomes (continued)

First Author, Year	Comparison Groups	Measures	Caregiver-Child Relationship	Caregiver-Child Relationship (Part 2)	Caregiver-Child Relationship (Part 3)	Caregiver-Child Relationship (Part 4)
Sprang, 2009 ⁸	G1: Attachment & Biobehavioral Catchup Intervention (ABC) G2: Temporary wait-list	Parenting Stress Index-Short Form (PSI/SF)=Parent Self-Report; CAPI=Parent Self-Report	CAPI Baseline, Mean (SD) (Completers only/ ITT mean and sd NR) G1: 189.02 (68.75) G2: 185.83 (43.29) Endpoint, Mean (SD) (Completers only/ ITT mean and sd NR) G1: 53.5 (36.3) G2: 189.36 (38.29) Change score mean (SD) (Completers only/ ITT mean and sd NR) G1: -135.02 (NR) G2: 0.34 (NR) Between group completers results, t= 31.73, p< 0.001 Within group ITT Both groups p=sig (NR) Between group ITT results, F= 33.21, p=0.001	PSI/SF Baseline, Mean (SD) (Completers only/ ITT mean and sd NR) G1: 132.16 (15.36) G2: 139.0 (29.85) Endpoint, Mean (SD) (Completers only/ ITT mean and sd NR) G1: 45.18 (26.76) G2: 134.76. (24.08) Change score mean (SD) (Completers only/ ITT mean and sd NR) G1: -86.98 (NR) G2: -5.77 (NR) Between group completers results, t= 12.01, p=0.05 Within group ITT Both groups p=sig (NR) Between group ITT results, F= 7.83, p=0.01	None	None
Lewis-Morrarty, 2012 ⁴	G1: ABC G2: DEF	Dimensional Change Card Sort Penny-hiding game Peabody Picture Vocabulary Test	Cognitive Flexibility Mean Post-switch task G1: 5.00 (SD=2.03) G2: 2.40 (SD=2.87) Mcontrast=1.31, p=0.00, CI 0.35, 2.27)	Theory of Mind Mean performance G1: 8.76 (SD=0.44) G2: 6.80 (SD=2.51) Mcontrast=1.96, p=0.01, CI 0.81, 2.01)	None	None

Attachment-Based Intervention

Table E-7. Attachment-based intervention, study characteristics

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Moss, 2011 ⁹	Quebec, Canada	Government	RCT	1, 4	To compare the efficacy of a short-term attachment-based intervention compared to standard child welfare services for changing risk outcomes for children of maltreating families	G1: Short-term attachment-based intervention G2: Standard child welfare services	G1: 40 G2: 39	Post Intervention: About 1 week post-intervention Follow-up: None	Children between 12-71 months of age; Parents: - Biological mother or father and lived with child as primary caregiver; - Primarily French speaking; - Not participants in any other parent-child oriented txmt program; - Presently being monitored by community or child welfare agency for child maltxmt	See inclusion criteria

Table E-8. Attachment-based intervention, population characteristics

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age Mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
Moss, 2011 ⁹	G1: Short-term attachment-based intervention G2: Standard child welfare services	G1: 3.29 (1.44) G2: 3.42 (1.34) Total sample range: 12-71 months	G1: 42.9% G2: 34.4%	NR	NR	Biological parents	G1: 28.46 (8.10) G2: 27.13 (7.11)	G1: NR G2: NR Final sample: 94%	NR	NR

Table E-9. Attachment-based intervention, population clinical characteristics

First Author, Year	Comparison Groups	Maltreatment Type	Number of Exposures, Duration Of Exposure, Number Of CPS Referrals	Child Clinical Presentation, % With MH symptoms or Behavior Problem, % Meeting a Diagnosis	Caregiver Presentation % With MH Symptoms, % Meeting a Diagnosis
Moss, ⁹ 2011	G1: Short-term attachment-based intervention G2: Standard child welfare services	Total sample: neglect (72%), physical abuse (7%), sexual abuse (3%), both neglect and physical abuse (16%), and both neglected and sexually abused (2%) G1: NR G2: NR	Number of exposures Total sample: 1.4 Duration of exposure NR Number of CPS referrals NR	% with MH symptoms or behavior problems NR % meeting a dx NR	% with MH symptoms/substance abuse NR % meeting a dx NR

Table E-10. Attachment-based intervention, intervention characteristics

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
Moss, ⁹ 2011	G1: Short-term attachment-based intervention G2: Standard child welfare services	G1: 8 weekly 90-minute home visit sessions G2: Monthly visit by child welfare caseworker	G1: Parent G2: Parent	G1: Bachelors- (3) and masters-level clinical workers (1) with experience in child welfare settings G2: Child welfare caseworkers	G1: Yes G2: NR	G1: Individual G2: Individual	G1: Home G2: Home

Table E-11. Attachment-based intervention, mental health outcomes

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Moss, 2011 ⁹	G1: Short-term attachment-based intervention G2: Standard child welfare services	Parent-reported internalizing behavior problems for children; Parent-reported externalizing behavior problems for children	Parent-reported internalizing behavior problems for children (CBCL-I) Participating Families Baseline score mean (SD) G1: 56.73 (8.23) G2: 54.80 (11.77) p=NS Endpoint score mean (SD) G1: 54.43 (7.44) G2: 55.56 (11.45) p=NR Change score mean (SD) G1: NR G2: NR Between group, p=NS, d=-0.11 Follow up score mean (SD) NA Dropped Out Families (N=22) Baseline score mean (SD) Total: 56.71 (9.73)	Parent-reported externalizing behavior problems for children (CBCL-E) Participating Families Baseline score mean (SD) G1: 59.47 (9.82) G2: 60.73 (11.60) p=NS Endpoint score mean (SD) G1: 57.85 (9.84) G2: 57.54 (12.61) p=NR Change score mean (SD) G1: NR G2: NR Between group, p=NS, d=0.03 Follow up score mean (SD) NA Dropped Out Families (N=22) Baseline score mean (SD) Total: 59.53 (10.31)	None	None

Table E-12. Attachment-based intervention, healthy caregiver child relationship outcomes

First Author, Year	Comparison Groups	Measures	Caregiver-Child Relationship	Caregiver-Child Relationship (Part 2)	Caregiver-Child Relationship (Part 3)	Caregiver-Child Relationship (Part 4)
Moss, 2011 ⁹	G1: Short-term attachment-based intervention G2: Standard child welfare services	Maternal sensitivity; Child attachment; Change patterns in attachment security; Change patterns in attachment organization	Maternal sensitivity: Maternal Behavior Q-Set Baseline score mean (SD) G1: 0.26 (0.46) G2: 0.28 (0.46) p=NS Endpoint score mean (SD) G1: 0.48 (0.31) G2: 0.31 (0.39) p<0.05, d=0.47 Change score mean (SD) G1: NR G2: NR p=NR Follow up score mean (SD) NA Dropped Out Families (N=22) Baseline score mean (SD) Total: 0.28 (0.48)	Child attachment: Ainsworth Strange Situation Secure attachment Baseline score n (%) G1: 9 (25.7%) G2: 7 (21.9%) p=NS Endpoint score mean (SD) G1: 23 (65.7%) G2: 9 (28.1%) p=NR Change score mean (SD) NR Follow up score mean (SD) NA Avoidant attachment Baseline score n (%) G1: 5 (14.3%) G2: 4 (12.5%) p=NS Endpoint score mean (SD) G1: 5 (14.3%) G2: 2 (6.3%) p=NR Change score mean (SD) NR Follow up score mean (SD) NA	Change patterns in attachment security: Ainsworth Strange Situation Secure to secure G1: 8 (22.9%) G2: 4 (12.5%) p=NS Secure to insecure G1: 1 (2.8%) G2: 3 (9.4%) p=NS Insecure to insecure G1: 11 (31.4%) (z=-2.50) G2: 20 (62.5%) (z=2.50) p=Significant (z >= 1.96) Insecure to secure G1: 15 (42.9%) (z=2.40) G2: 5 (15.6%) (z=-2.40), p=Significant (z>=1.96) Overall pfor association between attachment security change and txmt group<0.05 r (effect size)=0.36	Change patterns in attachment organization: Ainsworth Strange Situation Organized to organized G1: 15 (42.9%) G2: 9 (28.1%) p=NS Organized to disorganized G1: 1 (2.9%) (z >= 1.96) G2: 7 (21.9%) (z >= 1.96) p=Significant (z >= 1.96) Disorganized to disorganized G1: 6 (17.1%) G2: 11 (34.4%) p=NS Disorganized to organized G1: 13 (37.1%) (z=2.00) G2: 5 (15.6%) (z=-2.00) Overall pfor association between attachment organization change and txmt group<0.05 r (effect size)=0.37

Bucharest Early Intervention Project

Table E-13. Bucharest early intervention project, study characteristics

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Bos, 2009 ¹⁰	Bucharest Romania	MacArthur Fdn, Binder Family Fdn, Richard David Scott Endow, Doris Duke Charitable E-Fdn	RCT	1,4	Evaluate efficacy of foster care compared to institutional care on memory and executive functioning	G1: Foster Care (FCG) G2: Institutional Care (IG)	G1: 68 G2: 68	Age 8 years	Placed in institution close to birth, <31 months at age of placement	Genetic syndromes, symptoms of Fetal Alcohol Syndrome, microcephaly
Bos, 2010 ¹¹	Bucharest Romania	MacArthur Fdn, Binder Family Fdn, Richard David Scott Endow, Doris Duke Charitable E-Fdn	RCT	1, 4	Evaluate efficacy of foster care compared to institutional care on stereotypes	G1: Foster Care (FCG) G2: Institutional Care (IG)	G1: 68 G2: 68	Post Intervention: Age 30, 42, 54 months	Placed in institution close to birth, <31 months at age of placement	Genetic syndromes, symptoms of Fetal Alcohol Syndrome, microcephaly
Fox, 2011 ¹²	Bucharest Romania	MacArthur Fdn, Binder Family Fdn, Richard David Scott Endow, Doris Duke Charitable E-Fdn	RCT	1,4	Evaluate efficacy of foster care compared to institutional care on intellectual development	G1: Foster Care (FCG) G2: Institutional Care (IG)	G1: 68 G2: 68	Post Intervention: Age: 8 years	Placed in institution close to birth, <31 months at age of placement	Genetic syndromes, symptoms of Fetal Alcohol Syndrome, microcephaly
Ghera, 2009 ¹³	Bucharest Romania	MacArthur Foundation	RCT	1, 4	Evaluate efficacy of foster care compared to institutional care on attention and positive affect	G1: Foster Care (FG) G2: Institutional Care (IG)	G1: 68 G2: 68	Post Intervention: 30 months Follow-up: 42 months	Placed in institution close to birth, <31 months at age of placement	Medical reasons, including genetic syndromes, fetal alcohol syndrome, microcephaly

Table E-13. Bucharest early intervention project, study characteristics (continued)

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Johnson, 2010 ¹⁴	Bucharest Romania	MacArthur Fdn, Binder Family Fdn, Richard David Scott Endow, Doris Duke ChariTable E-Fdn	RCT	1, 4	Evaluate efficacy of foster care compared to institutional care on cognitive development and physical growth	G1: Foster Care (FCG) G2: Institutional Care (IG)	G1: 68 G2: 68	Post Intervention: Age: 30, 42, 54 months	Placed in institution close to birth, <31 months at age of placement	Genetic syndromes, symptoms of Fetal Alcohol Syndrome, microcephaly
McDermott, 2012 ¹⁵	Bucharest Romania	MacArthur Fdn, Binder Family Fdn, Richard David Scott Endow, Doris Duke ChariTable E-Fdn	RCT	1, 4	Evaluate efficacy of foster care compared to institutional care on neural correlates of executive functioning	G1: Foster Care (FCG) G2: Institutional Care (IG)	G1: 68 G2: 68	Age 8 years	Placed in institution close to birth, <31 months at age of placement	Genetic syndromes, symptoms of Fetal Alcohol Syndrome, microcephaly
McLaughlin, 2011 ¹⁶	Bucharest Romania	MacArthur Fdn, Binder Family Fdn, Richard David Scott Endow, Doris Duke ChariTable E-Fdn	RCT	1, 4	Evaluate efficacy of foster care compared to institutional care on mental health outcomes	G1: Foster Care (FCG) G2: Institutional Care (IG)	G1: 68 G2: 68	Age 42 (attachment) and 54 (mental health symptoms) months	Placed in institution close to birth, <31 months at age of placement	Genetic syndromes, symptoms of Fetal Alcohol Syndrome, microcephaly
McLaughlin, 2012 ¹⁷	Bucharest Romania	MacArthur Fdn, Binder Family Fdn, Richard David Scott Endow, Doris Duke ChariTable E-Fdn	RCT	1, 4	Evaluate efficacy of foster care compared to institutional care on frontal EEG assymetry	G1: Foster Care (FCG) G2: Institutional Care (IG)	G1: 68 G2: 68	Age 30, 42, 96 months	Placed in institution close to birth, <31 months at age of placement	Genetic syndromes, symptoms of Fetal Alcohol Syndrome, microcephaly

Table E-13. Bucharest early intervention project, study characteristics (continued)

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Nelson, 2007 ¹⁸	Bucharest, Romania	MacArthur Fdn, Richard David Scott End.	RCT	1, 4	Evaluate efficacy of foster care compared to institutional care on cognitive development and recovery	G1: Foster Care (FG) G2: Institutional Care (IG)	G1: 68 G2: 68	Post Intervention: 30 months Follow-up: 42 months, 54 months	Per above	Per above
Smyke, 2009 ¹⁹	Bucharest, Romania	MacArthur Foundation	RCT	1, 4	Evaluate efficacy of foster care compared to institutional care on attachment classification and behaviors	G1: Foster Care (FG) G2: Institutional Care (IG)	G1: 68 G2: 68	Post Intervention: 30 months Follow-up: 42 months	Placed in institution close to birth,<31 months at age of placement	Per above
Windsor, 2011 ²⁰	Bucharest Romania	MacArthur Fdn, Binder Family Fdn, Richard David Scott Endow, Doris Duke Charitable E-Fdn	RCT	1, 4	Evaluate efficacy of foster care compared to institutional care on language development	G1: Foster Care (FCG) G2: Institutional Care (IG)	G1: 68 G2: 68	Age 30, 42 months	Placed in institution close to birth,<31 months at age of placement	Genetic syndromes, symptoms of Fetal Alcohol Syndrome, microcephaly
Zeanah, 2009 ²¹	Bucharest Romania	MacArthur Foundation	RCT	1, 4	Efficacy of foster v institutional care for reducing psychiatric morbidity at 54 months of age	G1: Foster Care (FG) G2: Institutional Care (IG)	G1: 68 G2: 68	Post Intervention: 30 months Follow-up: 42 months, 54 months	Placed in institution close to birth,<31 months at age of placement	Per above

Table E-14. Bucharest early intervention project, population characteristics

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age Mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
Bos, 2009 ¹⁰	G1: Foster care (n=68) G2: Institutional care (n=68)	Total: 23.6 months (SD NR), 9-33 months	Overall: 48.4%	NR	Romanian 50.5%, Rroma 36.6%, Other or Unknown 12.9%	Foster Care, Institutional Care	NR	NR	NR	NR
Bos, 2010 ¹¹	G1: Foster care (n=68) G2: Institutional care (n=68)	Total: 22.9 months; SD NR, 6-33 months	NR	NR	NR	Foster Care, Institutional Care	NR	NR	NR	NR
Fox, 2011 ¹²	G1: Foster care (n=68) G2: Institutional care (n=68)	Mean, SD NR, Range 5-31 months	NR	NR	NR	Foster Care, Institutional Care	NR	NR	NR	NR
Ghera, 2009 ¹³	G1: Foster care (n=68) G2: Institutional care (n=68)	Total: 23.1 months (SD=6.8; 6.8-33.0 months)	G1: 50% G2: NR	NR	NR	Foster Care, Institutional Care	NR	NR	NR	NR
Johnson , 2010 ¹⁴	G1: Foster care (n=68) G2: Institutional care (n=68)	Total: 21.0 months (7.4), Range NR	50%	NR	Romanian 55%, Rroma 45%	Foster Care, Institutional Care	NR	NR	NR	NR
McDermott, 2012 ¹⁵	G1: Foster care (n=68) G2: Institutional care (n=68)	Mean, SD Range NR	44.7%	NR	NR	Foster Care, Institutional Care	NR	NR	NR	NR
McLaughlin, 2011 ¹⁶	G1: Foster care (n=68) G2: Institutional care (n=68)	G1: 20.9 months (7.1), Range NR G2: 20.8 months, (7.7), Range NR	G1: 49.3% G2: 51.5%	NR	NR	Foster Care, Institutional Care	NR	NR	NR	NR
McLaughlin, 2012 ¹⁷	G1: Foster care (n=68) G2: Institutional care (n=68)	G1: 20.9 months (7.1), Range NR G2: 20.8 months, (7.7), Range NR	G1: 49.3% G2: 51.5%	NR	NR	Foster Care, Institutional Care	NR	NR	NR	NR

Table E-14. Bucharest Early Intervention Project, population characteristics (continued)

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age Mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
Nelson, 2007 ¹⁸	G1: Foster care (n=68) G2: Institutional care (n=68)	G1: 21 months G2: Not reported (but not significantly different) ⁰	G1: 50% G2: 51%	NR	NR	Foster Care, Institutional Care	NR	NR	NR	NR
Smyke, 2009 ¹⁹	G1: Foster care (n=68) G2: Institutional care (n=68)	G1: 42.37 months G2: 42.44 months	G1: 47.5% G2: 50.9%	NR	Romanian G1: 57.4% G2: 45.6% Roma (Gypsy) G1: 29.5% G2: 36.8% Unknown G1: 13.1% G2: 17.5%	Foster Care, Institutional Care	NR	NR	NR	NR
Windsor, 2011 ²⁰	G1: Foster care (n=68) G2: Institutional care (n=68)	≤ 30 months	NR	NR	NR	Foster Care, Institutional Care	NR	NR	NR	NR
Zeanah, 2009 ²¹	G1: Foster care (n=68) G2: Institutional care (n=68)	Age at follow-up: 55.56 months (SD=1.92)	G1: 49% G2: 48%	NR	NR	Foster Care, Institutional Care	NR	NR	NR	NR

Table E-15. Bucharest early intervention project, population clinical characteristics

First Author, Year	Comparison Groups	Maltreatment Type	Number of Exposures, Duration of Exposure, Number of CPS Referrals	Child Clinical Presentation, % With MH Symptoms or Behavior Problem, % Meeting a Diagnosis	Caregiver Presentation % With MH Symptoms, % Meeting a Diagnosis
Bos, 2009 ¹⁰	G1: Foster care (n=68) G2: Institutional care (n=68)	NR, all institutional care as orphans or abandoned children	NR	NR	NR
Bos, 2010 ¹¹	G1: Foster care (n=68) G2: Institutional care (n=68)	NR, all institutional care as orphans or abandoned children	NR	Some stereotypies G1: 34% G2: 24% Many stereotypies G1: 35% G2: 38%	NR
Fox, 2011 ¹²	G1: Foster care (n=68) G2: Institutional care (n=68)	NR, all institutional care as orphans or abandoned children	NR	NR	NR
Ghera, 2009 ¹³	G1: Foster care (n=68) G2: Institutional care (n=68)	NR, all institutional care as orphans or abandoned children	NR	NR	NR
Johnson, 2010 ¹⁴	G1: Foster care (n=68) G2: Institutional care (n=68)	NR, all institutional care as orphans or abandoned children	NR	NR	NR
McDermott, 2012 ¹⁵	G1: Foster care (n=68) G2: Institutional care (n=68)	NR, all institutional care as orphans or abandoned children	NR	NR	NR

Table E-15. Bucharest early intervention project, population clinical characteristics (continued)

First Author, Year	Comparison Groups	Maltreatment Type	Number of Exposures, Duration of Exposure, Number of CPS Referrals	Child Clinical Presentation, % With MH Symptoms or Behavior Problem, % Meeting a Diagnosis	Caregiver Presentation % With MH Symptoms, % Meeting a Diagnosis
McLaughlin, 2011 ¹⁶	G1: Foster care (n=68) G2: Institutional care (n=68)	NR, all institutional care as orphans or abandoned children	NR	NR	NR
McLaughlin, 2012 ¹⁷	G1: Foster care (n=68) G2: Institutional care (n=68)	NR, all institutional care as orphans or abandoned children	NR	NR	NR
Nelson, 2007 ¹⁸	G1: Foster care (n=68) G2: Institutional care (n=68)	Not reported (all participants assigned to institutional care primarily due to abandonment)	NR	NR	NR
Smyke, 2009 ¹⁹	G1: Foster care (n=68) G2: Institutional care (n=68)	Not reported (all participants assigned to institutional care primarily due to abandonment)	NR	NR	NR
Windsor, 2011 ²⁰	G1: Foster care (n=68) G2: Institutional care (n=68)	NR, all institutional care as orphans or abandoned children	NR	NR	NR
Zeanah, 2009 ²¹	G1: Foster care (n=68) G2: Institutional care (n=68)	Not reported (all participants assigned to institutional care primarily due to abandonment)	NR	NR	NR

Table E-16. Bucharest early intervention project, intervention characteristics

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
Bos, 2009 ¹⁰	G1: Foster care (n=68) G2: Institutional care (n=68)	Variable based on placement from IG to FC or duration BIEP FC	G1: Foster parent G2: Institutional Care as Usual	G1: Trained social workers G2: Institutional staff	No	G1: FC support via home visits, telephone support, support group G2: SAU	G1: Foster home G2: Government Institution
Bos, 2010 ¹¹	G1: Foster care (n=68) G2: Institutional care (n=68)	Variable based on placement from IG to FC or duration BIEP FC	G1: Foster parent G2: Institutional Care as Usual	G1: Trained social workers G2: Institutional staff	No	G1: FC support via home visits, telephone support, support group G2: SAU	G1: Foster home G2: Government Institution
Fox, 2011 ¹²	G1: Foster care (n=68) G2: Institutional care (n=68)	Variable based on placement from IG to FC or duration BIEP FC	G1: Foster parent G2: Institutional Care as Usual	G1: Trained social workers G2: Institutional staff	No	G1: FC support via home visits, telephone support, support group G2: SAU	G1: Foster home G2: Government Institution
Ghera, 2009 ¹³	G1: Foster care (n=68) G2: Institutional care (n=68)	Variable based on placement from IG to FC or duration BIEpFC	G1: Foster parent G2: FpSAU	G1: Trained social workers G2: Institutional staff	No	G1: FC support via home visits, telephone support, support group G2: SAU	G1: Foster home G2: Group home
Johnson, 2010 ¹⁴	G1: Foster care (n=68) G2: Institutional care (n=68)	Variable based on placement from IG to FC or duration BIEP FC	G1: Foster parent G2: Institutional Care as Usual	G1: Trained social workers G2: Institutional staff	No	G1: FC support via home visits, telephone support, support group G2: SAU	G1: Foster home G2: Government Institution
McLaughlin, 2011 ¹⁶	G1: Foster care G2: Institutional care	Variable based on placement from IG to FC or duration BIEP FC	G1: Foster parent G2: Institutional Care as Usual	G1: Trained social workers G2: Institutional staff	No	G1: FC support via home visits, telephone support, support group G2: SAU	G1: Foster home G2: Government Institution
McLaughlin, 2012 ¹⁷	G1: Foster care G2: Institutional care	Variable based on placement from IG to FC or duration BIEP FC	G1: Foster parent G2: Institutional Care as Usual	G1: Trained social workers G2: Institutional staff	No	G1: FC support via home visits, telephone support, support group G2: SAU	G1: Foster home G2: Government Institution

Table E-16. Bucharest early intervention project, intervention characteristics (continued)

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
Nelson, 2007 ¹⁸	G1: Foster care (n=68) G2: Institutional care (n=68)	Variable based on placement from IG to FC or duration BIEpFC	G1: Foster parent G2: FpSAU	G1: Trained social workers G2: Institutional staff	No	G1: FC support via home visits, telephone support, support group G2: SAU	G1: Foster home G2: Group home
Smyke, 2009 ¹⁹	G1: Foster care (n=68) G2: Institutional care (n=68)	Variable based on placement from IG to FC or duration BIEpFC	G1: Foster parent G2: FpSAU	G1: Trained social workers G2: Institutional staff	No	G1: FC support via home visits, telephone support, support group G2: SAU	G1: Foster home G2: Group home
Windsor, 2011 ²⁰	G1: Foster care (n=68) G2: Institutional care (n=68)	Variable based on placement from IG to FC or duration BIEP FC	G1: Foster parent G2: Institutional Care as Usual	G1: Trained social workers G2: Institutional staff	No	G1: FC support via home visits, telephone support, support group G2: SAU	G1: Foster home G2: Government Institution
Zeanah, 2009 ²¹	G1: Foster care (n=68) G2: Institutional care (n=68)	Variable based on placement from IG to FC or duration BIEpFC	G1: Foster parent G2: FpSAU	G1: Trained social workers G2: Institutional staff	No	G1: FC support via home visits, telephone support, support group G2: SAU	G1: Foster home G2: Group home

Table E-17. Bucharest early intervention project, mental health outcomes

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Bos, 2010 ¹¹	G1: Foster care (n=68) G2: Institutional care (n=68)	Disturbances of Attachment Interview (Stereotypies) Preschool Age Psychiatric Assessment (PAPA)	Stereotypies Baseline (estimated %) Some stereotypies G1: 34% G2: 24% Many stereotypies G1: 35% G2: 38% (z=-0.20, p=.84) 30 months (estimated %) Some stereotypies G1: 40% G2: 22% Many stereotypies G1: 12% G2: 45% (z=2.99, p=.003) Stereotypies	Stereotypies 42 months (estimated %) Some stereotypies G1: 18% G2: 23% Many stereotypies G1: 10% G2: 32% (z=-3.36, p=.001) 54 months (estimated %) Some stereotypies G1: 20% G2: 28% Many stereotypies G1: 8% G2: 18% (z=-2.06 p=.04) In FC only, stereotypies associated with lower verbal comprehension, expressive language, developmental quotient, full scale IQ. Stereotypies highest for children placed at older age p=0006 @ 30m, p=0.03 @ 54m, p=0.34 @ 42m	Anxiety (PAPA) (54 months) (As a correlate of stereotypies) G1 (p=.13) With stereotypies: 29% Without stereotypies: 12% G2 (p=.19) With stereotypies: 50% Without stereotypies: 32%	None

Table E-17. Bucharest early intervention project, mental health outcomes (continued)

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Ghera, 2009 ¹³	G1: Foster care (n=68) G2: Institutional care (n=68)	Attention, Positive affect and negative affect (Laboratory Temperament Assessment Battery, Lab-TAB)	Attention (Lab-TAB) Baseline score mean (SD) G1: -0.5 G2: -0.45 p=>.05 30 month score: mean (SD) G1: 0.20 G2: -0.3 p=>.05 42 month score mean (SD) G1: 0.70 G2: -0.4 p=.01	Positive Affect (Lab-TAB) Baseline score mean (SD) G1: -1.0 G2: -0.5 p=>.05 30 month score: mean (SD) G1: 0.4 G2: -1.1 p=<.001 42 month score mean (SD) G1: 0.9 G2: -0.9 p=<.001	Negative Affect (Lab-TAB) Baseline score mean (SD) G1: -1.33 G2: -1.28 p=>.05 30 month score: mean (SD) G1: -1.35 G2: -1.35 p=>.05 42 month score mean (SD) G1: -1.31 G2: -1.37 p=>.05	None

Table E-17. Bucharest early intervention project, mental health outcomes (continued)

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
McDermott, 2012 ¹⁵	G1: Foster care (n=68) G2: Institutional care (n=68)	Go No Go task, EEG-based event-related potential (ERP)	<p>Mean % accuracy (SD) (N=76)</p> <p>Overall G1: 89.5% (5.8%) G2: 85.8% (7.3%) Btwn-groups p=NS</p> <p>Go trials G1: 94.7% (5.8%) G2: 90.5% (7.9%) Btwn-groups p<.05</p> <p>Nogo trials G1: 77.3% (12.1%) G2: 74.9% (11.9%) Btwn-groups p=NS</p> <p>Reaction time, mean (SD) (sec.)</p> <p>Overall G1: .502 (.08) G2: .558 (.11) Btwn-groups p<.05</p> <p>Reaction time: correct go trials, mean (SD) (sec.) G1: .545 (.07) G2: .584 (.08) Btwn-groups p<.05</p>	<p>Reaction time: incorrect nogo trials, mean (SD) (sec.) G1: .459 (.10) G2: .533 (.17) Btwn-groups p<.05</p> <p>ERN expression patterns, response magnitude, mean μV (SD) G1: -11.52 (6.0) G2: -5.19 (5.7) Btwn-groups p=.01</p> <p>Interaction placement age x outcome, p=NS</p>	None	None

Table E-17. Bucharest early intervention project, mental health outcomes (continued)

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
McLaughlin, 2012 ¹⁷	G1: Foster care (n=68) G2: Institutional care (n=68)	Preschool Age Psychiatric Assessment (PAPA)	<p>Internalizing symptoms Females (N=121)</p> <p>G1: 3.0 (1.6) G2: 5.2 (3.8) Btwn-groups p=.004</p> <p>Anxiety G1: 2.3 (1.0) G2: 3.6 (2.5) Btwn-groups p=.009</p> <p>Depression G1: 0.7 (0.8) G2: 1.6 (1.7) Btwn-groups p=.009</p> <p>Internalizing disorders G1: 4 (13.3%) G2: 14 (48.3%) Btwn-groups p=.006</p> <p>Males (N=121) at 54 months</p> <p>G1: 5.6 (3.4) G2: 4.9 (2.4) Btwn-groups p=.372</p> <p>Anxiety G1: 4.2 (2.5) G2: 3.5 (1.7) Btwn-groups p=.190</p> <p>Depression G1: 1.3 (1.3) G2: 1.4 (1.1) Btwn-groups p=.879</p>	<p>Externalizing symptoms Females (N=121).</p> <p>G1: 4.9 (1.0) G2: 6.6 (1.3) Btwn-groups p=.278</p> <p>ADHD sx's G1: 3.6 (0.8) G2: 4.8 (1.1) Btwn-groups p=.377</p> <p>ODD/Conduct D/O sx's. G1: 1.3 (0.3) G2: 1.9 (0.4) Btwn-groups p=.296</p> <p>Externalizing disorders G1: 5 (17.2%) G2: 4 (16.0%) Btwn-groups p=.903</p> <p>Externalizing symptoms Males (N=121)</p> <p>G1: 9.5 (1.4) G2: 9.7 (1.4) Btwn-groups p=.931</p> <p>ADHD sx's, 54 mos. G1: 6.2 (0.9) G2: 6.7 (1.0) Btwn-groups p=.692</p> <p>ODD/cnduct D/O sx's G1: 3.3 (0.6) G2: 3.0 (0.5) Btwn-groups p=.657</p>	None	None

Table E-17. Bucharest early intervention project, mental health outcomes (continued)

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
McLaughlin, 2012 ¹⁷ (continued)			Internalizing disorders G1: 10 (30.3%) G2: 14 (48.3%) Btwn-groups p=.150	Externalizing disorders G1: 10 (33.3%) G2: 11 (40.7%) Btwn-groups p=.563	None	None
Zeanah, 2009 ²¹	G1: Foster care (n=68) G2: Institutional care (n=68)	Preschool Age Psychiatric Assessment (PAPA) - (translated into Romanian, back-translated to English) Measured at follow-up: G1: N=59 G2: N=59	N (%) OR, 95%CI, <i>P</i> Any disorder G1: 27 (45.8) G2: 32 (61.5) 1.9, 0.9–4.0, 0.10 Any externalizing G1: 15 (25.4) G2: 15 (28.8) 1.2, 0.5–2.8, 0.69 Any internalizing G1: 13 (22.0) G2: 23 (44.2) 2.8, 1.2–6.4, 0.01 ADHD G1: 11 (18.6) G2: 12 (23.1) 1.3, 0.5–3.3, 0.57 Oppositional defiant disorder G1: 6 (10.2) G2: 3 (5.8) 0.5, 0.1–2.3, 0.40	N (%) OR, 95%CI, <i>P</i> Conduct Disorder G1: 6 (10.2) G2: 4 (7.7) 0.7, 0.2–2.8, 0.65 Either ODD or CD G1: 9 (15.3) G2: 6 (11.5) 0.7, 0.2–2.2, 0.57 Depression G1: 1 (1.7) G2: 2 (3.8) 2.3, 0.2–26.0, 0.50 Any anxiety disorder G1: 12 (20.3) G2: 22 (42.3) 2.9, 1.2–6.6, 0.01	N (%) OR, 95%CI, <i>P</i> Comorbidities One disorder G1: 13 (59.1) G2: 13 (50.0) 0.7, 0.2–2.2, 0.53 2 or more G1: 9 (40.9) G2: 13 (50.0) 1.4, 0.5–4.5, 0.53 Internalizing only G1: 7 (31.8) G2: 11 (42.3) 1.6, 0.5–5.2, 0.46 Externalizing only G1: 9 (40.9) G2: 3 (11.5) 5.3, 1.2–23.0, 0.03 Both G1: 6 (27.3) G2: 12 (46.2) 2.3, 0.7–7.7, 0.18	Numbers of Psychiatric Symptoms No group differences were significant

Table E-18. Bucharest early intervention project, healthy caregiver child relationship outcomes

First Author, Year	Comparison Groups	Measures	Caregiver-Child Relationship	Caregiver-Child Relationship (Part 2)	Caregiver-Child Relationship (Part 3)	Caregiver-Child Relationship (Part 4)
Johnson, 2010 ¹⁴	G1: Foster care (n=68) G2: Institutional care (n=68)	Observational Record of the Caregiving Environment (ORCE)	<p>Caretaking-quality, mean (SD)</p> <p>Baseline G1: 2.29 (0.57) G2: 2.0 (0.62) Btwn-groups p=NS</p> <p>30 months G1: 2.75 (0.52) G2: 2.46 (0.63) Btwn-groups p<.05</p> <p>42 months G1: 2.79 (0.57) G2: 2.53 (0.58) Btwn-groups p=NS</p> <p>Combined 30- and 42-month G1: 2.76 (0.48) G2: 2.49 (0.48) Btwn-groups p<.05</p>	None	None	None

Table E-18. Bucharest early intervention project, healthy caregiver child relationship outcomes (continued)

First Author, Year	Comparison Groups	Measures	Caregiver-Child Relationship	Caregiver-Child Relationship (Part 2)	Caregiver-Child Relationship (Part 3)	Caregiver-Child Relationship (Part 4)
McLaughlin, 2012 ¹⁷	G1: Foster care (n=68) G2: Institutional care (n=68)	Strange Situation	<p>Attachment security Females</p> <p>G1: 5 (22.7%) G2: 5 (23.8%) Btwn-groups p=.933</p> <p>42 mos. (N=126) G1: 19 (63.3%) G2: 4 (12.1%) Btwn-groups p<.001</p> <p>Change Insecure to Secure, G1: 9 (40.9%) G2: 2 (9.5%) Btwn-groups p=.029</p> <p>42-mos Secure Attachment G1: 5.0 (1.6) G2: 2.9 (1.3) Btwn-groups p<.001</p>	<p>Attachment security Males</p> <p>G1: 4 (14.8%) G2: 4 (16.0%) Btwn-groups p=.906</p> <p>42 mos. G1: 12 (35.3%) G2: 6 (20.7%) Btwn-groups p=.205</p> <p>Change Insecure to Secure G1: 8 (29.6%) G2: 4 (16.0%) Btwn-groups p=.250</p> <p>42-mos Secure Attachment G1: 4.2 (1.7) G2: 3.1 (1.4) Btwn-groups p=.007</p>	None	None

Table E-18. Bucharest early intervention project, healthy caregiver child relationship outcomes (continued)

First Author, Year	Comparison Groups	Measures	Caregiver-Child Relationship	Caregiver-Child Relationship (Part 2)	Caregiver-Child Relationship (Part 3)	Caregiver-Child Relationship (Part 4)
Smyke, 2009 ¹⁹	G1: Foster care (n=68) G2: Institutional care (n=68)	Strange Situation Observational Record of the Caregiving Environment (ORCE)	Secure N (%) G1: 30 (49.2) G2: 10 (17.5) Avoidant N (%) G1: 12 (19.7) G2: 14 (24.6) Ambivalent-Dependent N (%) G1: 5 (8.2) G2: 7 (12.3) Disorganized-Controlling N (%) G1: 8 (13.1) G2: 3 (5.3) Insecure-Other N (%) G1: 6 (9.8) G2: 23 (40.4) Distribution of attachment classifications significant: X2 (4)=22.62, p<.001,	Organized (A,B,C) N (%) G1: 47 (77.0) G2: 31 (54.4) Atypical or Controlling (D, I-O) N (%) G1: 14 (23.0) G2: 26 (45.6) Significant: X2 (1)=6.75, p<.01 Secure v Insecure G1>G2 X2-13.16, p<.001 Mean attachment security (1-9) G1>G2, F=17.10, p<.001	None	None

Table E-19. Bucharest early intervention project, healthy development outcomes

First Author, Year	Comparison Groups	Measures	Healthy Development Outcomes	Healthy Development Outcomes (Part 2)	Healthy Development Outcomes (Part 3)
Bos, 2009 ¹⁰	G1: Foster care (n=68) G2: Institutional care (n=68)	Cambridge Neuropsychological Test and Automated Battery (CANTAB)	<p>Visual memory Age 8 years (N=93) G1: NR G2: NR Between-groups p=NS</p> <p>Interaction Group x Age, p=NS</p> <p>Executive functioning G1: NR G2: NR Between-groups p=NS</p> <p>Interaction Group x Age, p=NS</p> <p>Spatial Working Memory strategy score (Covariates: birth weight, head circumference, time in institutional care) G1>G2 $\beta = -.043$, $p = .008$</p>	None	None

Table E-19. Bucharest early intervention project, healthy development outcomes (continued)

First Author, Year	Comparison Groups	Measures	Healthy Development Outcomes	Healthy Development Outcomes (Part 2)	Healthy Development Outcomes (Part 3)
Bos, 2010 ¹¹	G1: Foster care (n=68) G2: Institutional care (n=68)	(Correlates of Stereotypies) Reynell Developmental Language Scale Bayley Scales of Infant Development (DQ) Wechsler Preschool and Primary Scale of Intelligence (IQ)	Reynell (Language) G1: mean comprehension 30 mos (p=.003) With stereotypies: 17.9 Without stereotypies: 25.4 42 months (p=.08) With stereotypies: 34.2 Without stereotypies: 38.5 mean expressive 30 mos (p=.009) With stereotypies: 5.4 Without stereotypies: 10.8 42 mos (p=.001) With stereotypies: 17.8 Without stereotypies: 24.6 G2 mean comprehension 30 mos (p=.19) With stereotypies: 17.1 Without stereotypies: 19.7 42 mos (p=.52) With stereotypies: 32 Without stereotypies: 33.1 Mean expressive 30 mos (p=.53) With stereotypies: 5.30 Without stereotypies: 6.31 42 mos (p=.39) With stereotypies: 17.4 Without stereotypies: 19.1	DQ or IQ (aggregated) G1 30 mos (p=.02) with stereotypies: 77.46 without stereotypies: 84.92 42 mos (p=.004) with stereotypies: 75.12 without stereotypies: 87.53 54mos (p=.02) with stereotypies: 72.18 without stereotypies: 84.55 G2 30 mos (p=.21) with stereotypies: 74.74 without stereotypies: 78.75 42 mos (p=.09) with stereotypies: 72.46 without stereotypies: 78.72 54mos (p=.25) with stereotypies: 70.91 without stereotypies: 75.21	

Table E-19. Bucharest early intervention project, healthy development outcomes (continued)

First Author, Year	Comparison Groups	Measures	Healthy Development Outcomes	Healthy Development Outcomes (Part 2)	Healthy Development Outcomes (Part 3)
Fox, 2011 ¹²	G1: Foster care (n=68) G2: Institutional care (n=68)	Wechsler Intelligence Scale for Children, 4th Edition (WISC-IV);	Full-scale IQ (WISC-IV) (8 y.o., N=103) G1: 81.46 (15.32) G2: 76.16 (14.11) Between-groups p=.07 Verbal comprehension scale G1: 87.48 (15.87) G2: 81.22 (13.98) Between-groups p=.036 Perceptual reasoning scale G1: 83.81 (13.87) G2: 82.30 (14.61) Between-groups p=NS Working memory scale G1: 87.80 (15.49) G2: 83.88 (13.87) Between-groups p=NS Processing speed scale G1: 81.19 (12.92) G2: 78.38 (11.72) Between-groups p=NS	None	None
Johnson, 2010 ¹⁴	G1: Foster care (n=68) G2: Institutional care (n=68)	Bayley Scales of Infant Development 2nd Edition (BSID-II) Mental Developmental Index Wechsler Preschool Primary Scale of Intelligence 2nd Edition (WPPSI-II) Height, weight, head circumference	BSID-II Mental Development Index, Baseline G1: 76.1 (13.1) G2: 72.5 (13.2) Btwn-groups p=NS 42 months G1: 85.7 (14.2) G2: 77.1 (13.3) Btwn-groups p<.05 WPPSI-II Full Scale IQ 42 months G1: 81.0 (18.5) G2: 73.3 (13.1) Btwn-groups p<.05	Physical Maturation Height increase G1: z=0.06 (0.97) G2: z=-0.62 (0.99) t (1,108)=-3.65, p<.001 Weight increase G1: z=-0.31 (1.05) G2: z=-0.75 (1.17) t (1,108)=-1.98, p<.001 Occipital-frontal circumference increase G1, G2 NR Data NR, P=NS	None

Table E-19. Bucharest early intervention project, healthy development outcomes (continued)

First Author, Year	Comparison Groups	Measures	Healthy Development Outcomes	Healthy Development Outcomes (Part 2)	Healthy Development Outcomes (Part 3)
Marshall, 2008 ²²	G1: Foster care (n=68) G2: Institutional care (n=68)	EEG signal power & coherence	EEG Power (Absolute) No difference between groups G1 and G2, p=NR, NS. EEG Coherence No difference between groups G1 and G2. p=NR, NS.	None	None
McLaughlin, 2011 ¹⁶	G1: Foster care (n=68) G2: Institutional care (n=68)	Frontal EEG Asymmetry (FEA)	Mean (SD) (N=136) Baseline G1: .005 (.05) G2: .016 (.05) 30 mos. G1: -.000 (.04) G2: -.000 (.04) 42 mos. G1: -.018 (.07) G2: -.014 (.07) 96 mos. G1: .002 (.08) G2: -.006 (.09) Effect of time on FEA Time 1: $\beta = -.05$, $p < .001$ Time 2: $\beta = .01$, $p < .001$	None	None

Table E-19. Bucharest early intervention project, healthy development outcomes (continued)

First Author, Year	Comparison Groups	Measures	Healthy Development Outcomes	Healthy Development Outcomes (Part 2)	Healthy Development Outcomes (Part 3)
Nelson, 2007 ¹⁸	G1: Foster care (n=68) G2: Institutional care (n=68)	Cognitive Development Bayley Scales of Infant Development (BSID) Developmental Quotient Wechsler Preschool Primary Scale of Intelligence (WPPSI) Intellectual Quotient	BSID DQ 42 months G1: 85.7 (14.2) G2: 77.1 (13.3) Effect size: 0.62 $t(116)=3.39, p=0.001$ WPPSI 54 months G1: 81.0 (18.5) G2: 73.3 (13.1) Effect size: 0.47 $t(108)=2.48, p=0.015$	None	None
Smyke, 2009 ¹⁹	G1: Foster care (n=68) G2: Institutional care (n=68)	Cognitive Development: Bayley Scales of Infant Development (DQ) Used as covariate only	DQ by Group G1: 85.49 (14.23) G2: 76.90 (13.31) DQ by Organized v. Atypical Organized G1: 87.97 (13.11) G2: 81.36 (10.30) Atypical G1: 77.32 (15.18) G2: 71.36 (14.68) DQ by Secure v. Insecure Secure G1: 91.03 (11.29) G2: 77.40 (10.66) Insecure G1: 80.30 (14.89) G2: 76.79 (13.92)	None	None

Table E-19. Bucharest early intervention project, healthy development outcomes (continued)

First Author, Year	Comparison Groups	Measures	Healthy Development Outcomes	Healthy Development Outcomes (Part 2)	Healthy Development Outcomes (Part 3)
Windsor, 2011 ²⁰	G1: Foster care (n=68) G2: Institutional care (n=68)	Bayley Scales of Infant Development 2nd Edition (BSID-II) Mental Development Index Reynell Developmental Language Scales-III (RDLS) Receptive-Expressive Emergent Language Scale (REEL)	BSID-II Mental Development Index Baseline, N=29 G1: 81.1 (15.1) G2: 77.1 (9.8) Btwn-groups p=NR 30 mos., N=112 G1: 81.9 (11.6) G2: 77.2 (11.4) Btwn-groups p=NR 42 mos., N=117 G1: 85.7 (14.2) G2: 78.9 (12.6) Wilk's Lambda=.54 Btwn-groups p=.001 RDLS: Receptive 30 mos., N=101 G1: 41.5 (14.0) G2: 34.0 (32.6) Btwn-groups p=NS 42 mos., N=117 G1: 71.2 (16.0) G2: 62.0 (12.7) Btwn-groups p=NR Effect size (d)=0.63	RDLS: Expressive 30 mos., N=101 G1: 28.8 (19.5) G2: 14.5 (13.6) Btwn-groups p=NS 42 mos., N=117 G1: 60.0 (24.0) G2: 49.0 (20.0) Btwn-groups p=NR (d)=0.50 REEL quotient: Expressive Baseline, N=29 G1: 52.1 (24.1) G2: 49.8 (16.4) Btwn-groups p=.77 30 mos., N=112 G1: 74.2 (21.4) G2: 64.0 (17.3) Btwn-groups p=NS	None

Child-Parent Psychotherapy

Table E-20. Child-parent psychotherapy, study characteristics

First Author, Year	State, Country	Source(s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Cicchetti, 2006 ²³	State NR, US	Administration of Children, Youth and Families; the National Institute of Mental Health; Spunk Fund, Inc.	RCT	1, 4	To evaluate the efficacy of an attachment-informed, relationship-based intervention compared with a psychoeducational/behavioral approach in improving parent-child attachment.	G1: Child-Parent Psychotherapy (referred to as infant-parent psychotherapy in the study) G2: A psychoeducational parenting intervention derived from Olds et al. (e.g., 1997) home visitation preventive intervention (referred to as PPI in the study). Combination of social support, psychoeducational strategies, and cognitive-behavioral techniques. Primary goals: child development and parent training; supporting maternal self-care, adaptive functioning, and social skills. Adapted by study authors with supplemental cognitive and behavioral techniques to address parenting skill deficits and social-ecological factors associated with maltreatment. G3: Community Standard (CS)	G1: 53 G2: 49 G3: 35	Post Intervention: at child age approximately 26 months (approximately 13 months postbaseline)	Documented history of maltreatment or living with a biological caregiver who perpetrated abuse or neglect with a sibling.	Infants in foster care

Table E-20. Child-parent psychotherapy, study characteristics (continued)

First Author, Year	State, Country	Source(s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Toth, 2002 ²⁴	New York, US	Monroe County DSS, Office of Child Abuse & Neglect, Spunk Fund, Inc.	RCT (ongoing; reports on subsample)	1, 4	Compare efficacy of a relationship-based intervention with that of a psycho-educational home visitation intervention in improving child mental representations of attachment.	G1: Child-Parent Psychotherapy (referred to as preschooler-parent psychotherapy in the study) G2: A psychoeducational parenting intervention derived from Olds et al. (e.g., 1997) home visitation preventive intervention (referred to as PHV in the study). Combination of social support, psychoeducational strategies, and cognitive-behavioral techniques. Primary goals: child development and parent training; supporting maternal self-care, adaptive functioning, and social skills. Adapted by study authors with supplemental cognitive and behavioral techniques to address parenting skill deficits and social-ecological factors associated with maltreatment. G3: Community Standard (CS)	G1: 53 G2: 49 G3: 35	Post Intervention: at child age approximately 26 months (approximately 13 months post-baseline)	Documented history of maltreatment or living with a biological caregiver who perpetrated abuse or neglect with a sibling.	Infants in foster care

Table E-21. Child-parent psychotherapy, population characteristics

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age Mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
Cicchetti, 2006 ²³	G1: Child-Parent Psychotherapy (CPP) G2: Psychoeducational Intervention G3: Community Standard (CS)	All groups: 13.31 (0.81)	G1: 56.6 G2: 57.1 G3: 54.3	Minority group (not specified): G1: 81.1 G2: 67.3 G3: 77.1	NR	Maltreating biological mother	All groups: 26.87 (5.88)	G1: 100 G2: 100 G3: 100	Minority group (not specified): All groups 74.1%	NR
Toth, 2002 ²⁴	G1: Child-Parent Psychotherapy (CPP) G2: Psychoeducational Intervention G3: Community Standard (CS)	Age in Months G1: 48 (7.71) G2: 47.86 (6.07) G3: 49.16 (7.54)	G1: 43.5% G2: 32.4% G3: 56.7%	Minority: G1: 65.2% G2: 76.5% G3: 90%	NR	Biological parent (primarily)	NR	NR	NR	NR

Table E-22. Child-parent psychotherapy, population clinical characteristics

First Author, Year	Comparison Groups	Maltreatment Type	Number of Exposures, Duration of Exposure, Number of CPS Referrals	Child Clinical Presentation, % With MH Symptoms or Behavior Problem, % Meeting a Diagnosis	Caregiver Presentation % With MH Symptoms, % Meeting a Diagnosis
Cicchetti, 2006 ²³	G1: Child-Parent Psychotherapy (CPP) G2: Psychoeducational Intervention G3: Community Standard (CS)	Study Sample: 66.5% direct exposure to abuse or neglect in first year of life 33.6% exposed to abuse or neglect perpetrated by biological caregiver with a sibling Among children directly exposed: Neglect: 84.6% Emotional: 69.2% Physical abuse: 8.8% No sexual abuse	NR	NR	NR
Toth, 2002 ²⁴	G1: Child-Parent Psychotherapy G2: Psychoeducational Intervention G3: Community Standard (CS)	Study Sample: 60% exposure to multiple types of maltreatment Sexual/physical/neglect/emotional: 1% sexual/neglect/emotional: 1% Physical/neglect/emotional: 18% Physical/neglect: 5% Physical/emotional: 10% Neglect/emotional: 24% Sexual/neglect: 1% Physical: 5% Neglect: 21% Emotional: 14%	NR	NR	NR

Table E-23. Child-parent psychotherapy, intervention characteristics

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
Cicchetti, 2006 ²³	G1: Child-Parent Psychotherapy G2: Psychoeducational Intervention G3: Community Standard (CS)	G1: 1-hr weekly sessions for 12 months G2: 1-hr weekly sessions for 12 months G3: N/A	G1: Mother-child pairs (dyad) G2: Mother G3: N/A	G1: Master's level therapist G2: Master's level therapist G3: N/A	G1: Yes G2: Yes G3: N/A	G1: Dyadic G2: individual G3: N/A	G1: Primarily home-based G2: Primarily home-based G3: Standard child welfare services
Toth, 2002 ²⁴	G1: Child-Parent Psychotherapy (CPP) G2: Psychoeducational Intervention G3: Community Standard (CS)	G1: weekly 1-hr sessions for 12 months G2: weekly 1-HR sessions for 12 months G3: N/A	G1: Mother-child pairs (dyad) G2: Mother G3: Mixed: 60% in full- or part-time day care 50% in preschool program 13% CS children received individual psychotherapy over tx period for variety of mental health concerns; mean length of tx=9.33 months 23% of mothers rec'd individual psychotherapy 3% rec'd family or marital counseling 10% participated in support group or day tx services; mean length of tx was 5.82 months 17% rec'd some form of parenting services 23% rec'd concrete assistance 7% rec'd community gp services	G1: Masters-level clinicians G2: Masters-level clinicians G3: Standard child welfare services	Yes	G1: Therapist - mother/child dyad G2: Therapist - mother G3: Standard child welfare services	G1: Center-based w/periodic home visits G2: Majority of sessions home-based; some center-based depending on client needs G3: Standard DSS services

Table E-24. Child-parent psychotherapy, healthy caregiver child relationship outcomes

First Author, Year	Comparison Groups	Measures	Caregiver-Child Relationship	Caregiver-Child Relationship (Part 2)	Caregiver-Child Relationship (Part 3)
Cicchetti, 2006 ²³	G1: Child-Parent Psychotherapy (CPP) G2: Psychoeducational Intervention G3: Community Standard (CS)	Strange Situation Procedure: objective observational measure of quality of child-caregiver attachment Maternal variables: Perceptions of Adult Attachment Scale (PAAS) Maternal Behavior Q-Set Adult-Adolescent Parenting Inventory (AAPI) Parenting Stress Inventory (PSI) Social Support Behaviors Scale (SBS)	Treatment Completers: Disorganized attachment classification Baseline %: G1: 87.5 G2: 83.3 G3: 92.6 Endpoint %: G1: 32.1% G2: 45.5% G3: 77.8 No difference between G1 and G2, p=ns (NR) Difference between G1 and G3 p<.001 (<i>h</i> =.70-.96 – only range provided; contrasts included a 4 th group that was non-maltreated, non-randomized) Difference between G2 and G3 p<.01 (<i>h</i> =.70-.96; see above note)	Treatment Completers: Avoidant insecure classification Baseline %: G1: 6.3 G2: 12.5 G3: 3.7 Endpoint %: G1: 7.1 G2: 0.0 G3: 18.5 Resistant insecure classification Baseline %: G1: 3.1 G2: 4.2 G3: 3.7 Endpoint %: G1: 0.0 G2: 0.0 G3: 1.9 Rate of changing from insecure to secure classification (%) G1: 57.1 G2: 54.5 G3: 1.9 p=NR ITT Analysis: Rate of changing from insecure to secure classification-difference between G1 and G3 p<.01 (<i>h</i> =1.34) Difference between G2 and G3 p<.01 (<i>h</i> =1.16) No difference between G1 and G2: p=ns (NR)	Treatment Completers: Stable insecure classification pre-post (%) G1 39.3 G2: 45.5 G3: 98.1 p=NR Difference between G1 and G3 p<.001 (<i>h</i> =1.51) Difference between G2 and G3 p<.001 (<i>h</i> =1.34) No difference between G1 and G2 p=ns (NR) ITT Analysis: Changing from insecure to secure classification-difference between G1 and G3 P<.01 (<i>h</i> =1.34) Difference between G2 and G3 P<.01 (<i>h</i> =1.16) No difference between G1 and G2 p=ns (NR)

Table E-24. Child-parent psychotherapy, healthy caregiver child relationship outcomes (continued)

First Author, Year	Comparison Groups	Measures	Caregiver-Child Relationship	Caregiver-Child Relationship (Part 2)	Caregiver-Child Relationship (Part 3)	Caregiver-Child Relationship (Part 4)
Cicchetti, 2006 ²³ (continued)	G1: Child-Parent Psychotherapy (CPP) G2: Psychoeducational Intervention G3: Community Standard (CS)	Strange Situation Procedure: objective observational measure of quality of child-caregiver attachment Maternal variables: Perceptions of Adult Attachment Scale (PAAS) Maternal Behavior Q-Set Adult-Adolescent Parenting Inventory (AAPI) Parenting Stress Inventory (PSI) Social Support Behaviors Scale (SBS)	ITT Analysis: Rate of stable disorganized classification pre-post (%) G1 45.5 G2: 50.0 G3: 80.0 Difference between G1 and G3 p=.01 (<i>h</i> =.83) Difference between G2 and G3 p=.025 (<i>h</i> =.64) No difference between G1 and G2 p=ns (NR)	Treatment Completers: Secure classification Baseline % G1: 3.1 G2: 0.0 G3: 0.0 Endpoint % G1: 60.7% G2: 54.5% G3: 1.9% ITT Analysis: Secure classification-difference between G1 and G3 p<.01 (<i>h</i> =1.16-1.39; see previous note re effect size w/range only provided) Difference between G2 and G3 p<.01 (<i>h</i> =1.16-1.39; see above note) No difference between G1 and G2 p=ns (NR)	Treatment Completers: Rate of stable secure classification pre-post (%) G1: 3.6 G2: 0.0 G3: 0.0 Within and between group differences NR	No significant group x time effects of maternal variables (maternal representations of her own mother, maternal sensitivity, parenting attitudes, child-rearing stress, social support. p=NR

Table E-24. Child-parent psychotherapy, healthy caregiver child relationship outcomes (continued)

First Author, Year	Comparison Groups	Measures	Caregiver-Child Relationship	Caregiver-Child Relationship (Part 2)	Caregiver-Child Relationship (Part 3)	Caregiver-Child Relationship (Part 4)
Toth, 2002 ²⁴	G1: Child-Parent Psychotherapy (CPP) G2: Psychoeducational Intervention G3: Community Standard (CS)	MacArthur Story Stem Battery & MacArthur Narrative Coding Manual-Rochester Revision Note: Another coding schema was used for mother-child expectations; could not ascertain the validity of this measure – no published reports.	Adaptive maternal representations Baseline mean (SD) G1: 4.61 (2.89) G2: 4.85 (3.01) G3: 3.97 (3.06) Post-intervention mean (SD) by condition NR Baseline mean (SD) combined across conditions (including a non-randomized non-maltreated comparison group) 4.59 (3.23) Post-intervention mean (SD) combined across 4 conditions 6.72 (3.73) Main effect of time across 4 study conditions: F (1,120)=39.24, p<.001 Study condition x time interaction: F (3, 118)=2.00, p=ns (nr) Change score (mean, SD) p=ns (nr)	Positive Self-Representations Baseline mean (SD) G1: 2.39 (1.64) G2: 2.56 (2.03) G3: 1.67 (1.61) Post-intervention mean (SD) by condition: G1: 4.83 (2.18) G2: 3.32 (1.92) G3: 3.60 (2.25) Baseline mean (SD) combined across study groups (including a non-randomized non-maltreated group) 2.13 (1.73) Post-intervention mean (SD) combined across study groups 3.80 (2.27) Main effect of time across 4 study conditions: F (1,120)=55.27, p<.001	Negative Self-Representations Baseline mean (SD) G1: 4.35 (2.82) G2: 3.21 (2.60) G3: 3.07 (1.96) Post-intervention mean (SD) by condition: G1: 2.35 (1.67) G2: 3.59 (2.15) G3: 3.40 (2.24) Baseline mean (SD) combined across study groups 3.30 (3.35) Post-intervention mean (SD) combined across study groups 3.10 (2.08) No main effect of time across 4 study conditions: F (1,120)=1.98, p=ns (nr) Across study conditions x time interaction: F (3, 118)=4.93, p<.001	False Self-Representation Baseline mean (SD) G1: 0.13 (0.34) G2: 0.33 (0.59) G3: 0.07 (0.26) Post-intervention mean (SD) by condition NR Baseline mean (SD) combined across 4 conditions (including a non-randomized non-maltreated comparison group) 0.17 (0.42) Post-intervention mean (SD) combined across 4 conditions 0.19 (0.43) No main effect of time across 4 study conditions: F (1,120)=0.13, p=ns (nr) Across study conditions x time interaction: F (3, 118)=0.56, p=ns (nr)

Table E-24. Child-parent psychotherapy, healthy caregiver child relationship outcomes (continued)

First Author, Year	Comparison Groups	Measures	Caregiver-Child Relationship	Caregiver-Child Relationship (Part 2)	Caregiver-Child Relationship (Part 3)	Caregiver-Child Relationship (Part 4)
Toth, 2002 (continued) ²⁴	G1: Child-Parent Psychotherapy (CPP) G2: Psychoeducational Intervention G3: Community Standard (CS)	MacArthur Story Stem Battery & MacArthur Narrative Coding Manual-Rochester Revision Note: Another coding schema was used for mother-child expectations; could not ascertain the validity of this measure – no published reports.	Maladaptive maternal representations Baseline mean (SD) G1: 4.17 (3.16) G2: 3.18 (2.41) G3: 3.60 (2.62) Post-intervention mean (SD) G1: 1.70 (2.08) G2: 2.38 (1.42) G3: 3.00 (2.87) Baseline mean (SD) combined across study groups (including a non-randomized non-maltreated group) 3.34 (2.68) Post-intervention mean (SD) combined across study groups 2.41 (2.22) Main effect of time across study groups F (1,120)=17.43, p<.001 Study condition x time interaction: G1: t (22)=4.05, p<.001 G2: t (33)=1.85, p=.079 G3: t (29)=1.11, p=.28 Change score mean (SD) G1: -2.48 (2.94) G2: -0.79 (2.51) G3: -0.60 (2.97) G1>G3: p<.10	Positive Self-Representations (continued) Within group study condition by time interaction: G1: t (22)=4.70, p<.001 G2: t (33)=1.74, p<.10 G3: t (29)=3.88, p<.001 Change score (mean, SD) G1: 2.44 (2.48) G2: 0.77 (2.56) G3: 1.93 (2.73) G1 > G2, p<.10	Negative Self-Representations (continued) Within group study condition x time interaction: G1: t (22)=3.86, p<.001 G2: t (33)=0.92, p=.37 G3: t (29)=0.69, p=.50 Change score (mean, SD) G1: -2.00 (2.49) G2: 0.38 (2.44) G3: 0.33 (2.66) G1>G2: p<.01 G1>G3: p<.01	False Self-Representation (continued) Within group study condition x time interaction: p=ns (nr) Change score mean (SD) p=ns (nr)

Combined Parent-Child Cognitive Behavioral Therapy

Table E-25. Combined parent-child cognitive behavioral therapy, study characteristics

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Runyon, 2010 ²⁵	New Jersey, USA	NIMH	RCT	1, 4	To compare the efficacy of two types of group CBT for preventing physical abuse recurrence and treating child traumatic symptoms.	G1: Combined Parent-Child CBT (CPC-CBT) G2: Parent-Only CBT: Overlapping components with G1: motivational interviewing; psychoeducation; anger management and coping skills; personal safety plan. Focus on parent skills training and behavior management. Children received an 'Attentional Control Child Activity' Intervention (neutral games and art projects). Similar to usual care parent-focused services.	Children G1: 40 G2: 35 Parents G1: NR G2: NR	Post Intervention: Immediately following treatment completion Follow-up: 3 months post-intervention	Substantiated CPS allegation or parent acknowledged use of physical punishment by positively endorsing 2+ items on Minor Assault or 1 item on Severe or Very Severe Assault subscales of Conflict Tactics Scale-Parent-Child. Substantiated allegation/physical punishment within past 4 months; Children had to meet 1+ symptom criteria: - Endorsement of 4 PTSD symptoms; - Elevation (T score > or=65) on at least 1 externalizing behavior subscale on CBCL; Siblings included if child physical abuse + symptom criteria met	Parent and child: -Active psychotic or substance use disorder resulting in significant impairment in adaptive functioning; - Unwilling to participate; - Pervasive developmental disorder; - Parent had also perpetrated sexual abuse against child; -Not receiving psychotherapy for child physical abuse outside of study. If parent or child currently taking psychotropic medications, must have had sTable E-medication regimen for at least 1 month prior to admission to study.

Table E-26. Combined parent-child cognitive behavioral therapy, population characteristics

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age Mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
Runyon, 2010 ²⁵	G1: Combined Parent-Child CBT (CPC-CBT) G2: Parent-Only CBT	G1: 9.82 (2.11) G2: 9.96 (1.93) d (effect size)=0.07	G1: 44% G2: 50%	% African American G1: 53% G2: 27% % other race (specify) - NS G1: 47% G2: 73%	NR	NR	G1: 33.17 (6.56) G2: 32.85 (5.70)	G1: 100% G2: 70% p<0.01	% African American G1: 46% G2: 35% % other race (specify) - NS G1: 54% G2: 65%	NR

Table E-27. Combined parent-child cognitive behavioral therapy, population clinical characteristics

First Author, Year	Comparison Groups	Maltreatment Type	Number of Exposures, Duration of Exposure, Number of CPS Referrals	Child Clinical Presentation, % With MH Symptoms or Behavior Problem, % Meeting a Diagnosis	Caregiver Presentation % With MH Symptoms, % Meeting a Diagnosis
Runyon, 2010 ²⁵	G1: Combined Parent-Child CBT (CPC-CBT) G2: Parent-Only CBT	Total sample: 2-6 different types of traumatic experiences (e.g., domestic violence, CPA) G1: Physical abuse G2: Physical abuse	Number of <u>trauma</u> events including but not limited to physical abuse: Total sample: 3.12 (1.26) G1: NR G2: NR Duration of exposure NR Number of CPS referrals NR Previous tx for child abuse (n, %) G1: 917 (71) G2: 9 (45) Previous reports of physical abuse: G1: 17 (50) G2: 5 (19)	% with MH symptoms or behavior problems (T score > or =65 on CBCL) Total sample: 40% G1: NR G2: NR % meeting a dx NR % with MH symptoms or behavior problems (at least 4 PTSD symptoms) Total sample: 100% Mode # of PTSD symptoms: 7 Range of PTSD symptoms: 4-11	% with MH symptoms/substance abuse NR % meeting a dx NR Age of first physical abuse mean (SD) G1 : 9.26 (2.60) G2: 9.73 (2.01) Months since last physical abuse (IPV): G1: 3.18 (4.06) G2: 2.42 (2.40)

Table E-28. Combined parent-child cognitive behavioral therapy, intervention characteristics

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
Runyon, 2010 ²⁵	G1: Combined Parent-Child CBT (CPC-CBT) G2: Parent-Only CBT	G1: 16 2-hour group sessions over 16- to 20-week period G2: Weekly 2-hour group sessions	G1: Parent, child, parent-child together G2: Parent only	G1: Doctoral-level psychologists and master-level social workers G2: Doctoral-level psychologists and master-level social workers	G1: Yes G2: Yes	G1: Group G2: Group	G1: Clinic G2: Clinic

Table E-29. Combined parent-child cognitive behavioral therapy, mental health outcomes

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Runyon, 2010 ²⁵	G1: Combined Parent-Child CBT (CPC-CBT) G2: Parent-Only CBT	PTSD symptoms; Parent-reported internalizing behavior problems for children; Parent-reported externalizing behavior problems for children	PTSD symptoms (K-SADS-PL) Baseline summary scores across parent and child, mean (SD) G1: 6.44 (1.60) G2: 6.58 (1.90) p=NR Endpoint summary scores across parent and child, mean (SD) G1: 2.76 (1.83) G2: 4.15 (2.72) p=NR Change score mean (SD) G1: p<0.001, d=1.69 G2: p<0.001, d=1.02 Adjusted endpoint mean score (baseline scores as covariates) mean G1: 2.78 G2: 4.13 Between group, p<0.05 Follow up score mean (SD) NR, but no significant differences from posttest found (i.e., changes at post-intervention maintained through follow-up)	Parent-reported internalizing behavior problems for children (CBCL-I) Baseline score mean (SD) G1: 8.59 (6.83) G2: 9.12 (8.93) p=NR Endpoint score mean (SD) G1: 6.47 (5.10) G2: 5.62 (6.68) p=NR Change score mean (SD) G1: p<0.01, d=0.32 G2: p<0.01, d=0.41 Adjusted endpoint mean score (baseline scores as covariates) mean G1: 6.61 G2: 5.43 Between group, p=NS (NR) Follow up score mean (SD) NR, but no significant differences from posttest found	Parent-reported externalizing behavior problems for children (CBCL-E) Baseline score mean (SD) G1: 16.62 (10.99) G2: 17.69 (11.55) p=NR Endpoint score mean (SD) G1: 13.32 (11.18) G2: 11.12 (10.96) p=NR Change score mean (SD) G1: p=NS, d=0.30 G2: p<0.01, d=0.59 Adjusted endpoint mean score (baseline scores as covariates) mean G1: 13.61 G2: 10.75 Between group, p=NS (NR) Follow up score mean (SD) NR, but no significant differences from posttest found	None

Table E-30. Combined parent-child cognitive behavioral therapy, healthy caregiver child relationship outcomes

First Author, Year	Comparison Groups	Measures	Caregiver-Child Relationship	Caregiver-Child Relationship (Part 2)	Caregiver-Child Relationship (Part 3)	Caregiver-Child Relationship (Part 4)
Runyon, 2010 ²⁵	G1: Combined Parent-Child CBT (CPC-CBT) G2: Parent-Only CBT	Positive parenting skills and use of corporal punishment: APQ-Child (APQ-C) and Parent (APQ-P)	<p>Positive parenting skills: APQ-C</p> <p>Baseline score mean (SD)</p> <p>G1: 22.68 (5.06)</p> <p>G2: 19.81 (6.03)</p> <p>p=NR</p> <p>Endpoint score mean (SD)</p> <p>G1: 23.09 (5.08)</p> <p>G2: 20.12 (6.92)</p> <p>p=NR</p> <p>Change score mean (SD)</p> <p>G1: p=NS (NR), d=0.05</p> <p>G2: p=NS, (NR), d=0.08</p> <p>Adjusted endpoint mean score (baseline scores as covariates) mean</p> <p>G1: 22.34</p> <p>G2: 21.10</p> <p>Between group, p=NS (NR)</p> <p>Follow up score mean (SD)</p> <p>NR, but no significant differences from posttest found</p>	<p>Use of corporal punishment: APQ-C</p> <p>Baseline score mean (SD)</p> <p>G1: 6.47 (3.25)</p> <p>G2: 7.08 (3.32)</p> <p>p=NR</p> <p>Endpoint score mean (SD)</p> <p>G1: 4.12 (2.01)</p> <p>G2: 5.35 (2.81)</p> <p>p=NR</p> <p>Change score mean (SD)</p> <p>G1: p<0.001, d=0.86</p> <p>G2: p<0.01, d=0.56</p> <p>Adjusted endpoint mean score (baseline scores as covariates) mean</p> <p>G1: 4.19</p> <p>G2: 5.25</p> <p>Between group, p=NS</p> <p>Follow up score mean (SD)</p> <p>NR, but no significant differences from posttest found</p>	<p>Positive parenting skills: APQ-P</p> <p>Baseline score mean (SD)</p> <p>G1: 23.47 (3.60)</p> <p>G2: 23.42 (5.16)</p> <p>p=NR</p> <p>Endpoint score mean (SD)</p> <p>G1: 24.71 (4.01)</p> <p>G2: 23.00 (5.35)</p> <p>p=NR</p> <p>Change score mean (SD)</p> <p>G1: p<0.05, d=0.32</p> <p>G2: p=NS (NR), d=0.08</p> <p>Adjusted endpoint mean score (baseline scores as covariates) mean</p> <p>G1: 24.69</p> <p>G2: 23.02</p> <p>Between group, p<0.05</p> <p>Follow up score mean (SD)</p> <p>NR, but no significant differences from posttest found</p>	<p>Use of corporal punishment: APQ-P</p> <p>Baseline score mean (SD)</p> <p>G1: 6.44 (2.90)</p> <p>G2: 5.62 (2.02)</p> <p>p=NR</p> <p>Endpoint score mean (SD)</p> <p>G1: 4.76 (2.18)</p> <p>G2: 3.58 (1.33)</p> <p>p=NR</p> <p>Change score mean (SD)</p> <p>G1: p<0.01, d=0.65</p> <p>G2: p<0.001, d=1.17</p> <p>Adjusted endpoint mean score (baseline scores as covariates) mean</p> <p>G1: 4.69</p> <p>G2: 3.67</p> <p>Between group, p<0.05</p> <p>Follow up score mean (SD)</p> <p>NR, but no significant differences from posttest found</p>

Eye Movement Desensitization and Reprocessing

Table E-31. Eye movement desensitization and reprocessing, study characteristics

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Jaberghaderi, 2004 ²⁶	Iran	Not Reported	Randomized Trial	1	Compare efficacy of CBT and EMDR for treating sexually abused girls (ages 12-13)	G1: EMDR G2: CBT	G1: 7 G2: 7	Post Intervention: 2 weeks Follow-up: NA	≥19 on Child Report of Post Traumatic Symptoms; History of sexual abuse; Unwanted oral, anal, genital, or breast contact with another person ≥6 months before study	Continued abuse

Table E-32. Eye movement desensitization and reprocessing, population characteristics

First Author, Year	Comparison Groups	Child Age mean (SD); range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age Mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
Jaberghaderi, 2004 ²⁶	G1: EMDR G2: CBT	G1: 12-13 years G2: 12-13 years	G1: 100% G2: 100%	NR	100% other ethnicity (specify) G1: Iranian G2: Iranian	Biological Parent	NR	NR	NR	NR

Table E-33. Eye movement desensitization and reprocessing, population clinical characteristics

First Author, Year	Comparison Groups	Maltreatment Type	Number of Exposures, Duration of Exposure, Number of CPS Referrals	Child Clinical Presentation, % with MH Symptoms or Behavior Problem, % Meeting A Diagnosis	Caregiver Presentation % With MH Symptoms, % Meeting A Diagnosis
Jaberghaderi, 2004 ²⁶	G1: EMDR G2: CBT	Sexual Abuse	NR	% clinically sig. level of post-traumatic symptoms G1: 100% G2: 100%	NR

Table E-34. Eye movement desensitization and reprocessing, intervention characteristics

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
Jaberghaderi, 2004 ²⁶	G1: Eye movement desensitization and reprocessing (EMDR) G2: Cognitive-Behavioural Therapy (CBT)	G1: 4-8 (M=6.1) 30-45 minute sessions G2: 10-12 (M=11.6) 45 minute session	G1: Child G2: Child	G1: Professor and PhD level clinical psychologist G2: Professor and PhD level clinical psychologist	Yes	G1: Individual G2: Individual	G1: Clinic G2: Clinic

Table E-35. Eye movement desensitization and reprocessing, mental health outcomes

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Jaberghaderi, 2004 ²⁸	G1: EMDR G2: CBT	Child Report of Post-traumatic Symptoms (CROPS); Parent Report of Post-traumatic Symptoms (PROPS); Rutter Teacher Scale (Rutter); Subjective Units of Distress Scale (SUDS)	Child Report of Post-traumatic Symptoms Baseline score mean (SD) G1: 34.86 (5.8) G2: 30.00 (6.4) Endpoint score mean (SD) G1: 18.86 (7.9) G2: 22.71 (6.9) Between group, $p=0.15$ Change score mean (SD) G1: $p<0.05$ <i>Effect Size Cohen's $d=2.8$</i> G2: $p=0.116$ <i>Effect Size Cohen's $d=1.1$</i> Between group, $p=NS$ Normal/Clinical baseline G1: 0/7 G2: 0/7 Normal/Clinical endpoint G1: 3/4 G2: 2/5 Mean per session score change (SD) G1: 3.0 G2: 0.67 Between group, $p=0.04$ <i>Effect Size Cohen's $d=2.3$</i>	Parent Report of Post-traumatic Symptoms Baseline score mean (SD) G1: 21.00 (6.2) G2: 22.43 (10.3) Endpoint score mean (SD) G1: 10.14 (5.4) G2: 11.29 (6.6) Between group, $p=0.96$ Change score mean (SD) G1: $p<0.05$ <i>Effect Size Cohen's $d=1.8$</i> G2: $p<0.05$ <i>Effect Size Cohen's $d=1.1$</i> Between group, $p=NS$ Normal/Clinical baseline G1: 2/5 G2: 2/5 Normal/Clinical endpoint G1: 6/1 G2: 5/2 Mean per session score change (SD) G1: 2.4 G2: 0.96 Between group, $p=0.18$ <i>Effect Size Cohen's $d=2.0$</i>	Rutter Teacher Scale Baseline score mean (SD) G1: 13.71 (12.2) G2: 8.86 (7.7) Endpoint score mean (SD) G1: 5.00 (5.3) G2: 3.00 (2.9) Between group, $p=0.42$ Change score mean (SD) G1: $p<0.05$ <i>Effect Size Cohen's $d=0.71$</i> G2: $p<0.05$ <i>Effect Size Cohen's $d=0.72$</i> Between group, $p=NS$ Normal/Clinical baseline G1: 5/2 G2: 5/2 Normal/Clinical endpoint G1: 6/1 G2: 7/0 Mean per session score change (SD) G1: 1.4 G2: 0.50 Between group, $p=0.04$ <i>Effect Size Cohen's $d=2.0$</i>	Sessions until Subjective Units of Distress score between 0-2 Endpoint score mean (SD) G1: 6.1 sessions G2: 11.6 sessions Between group, $t(12)=7.1$ $p<0.000$ <i>Effect Size Cohen's $d=4.2$</i>

Fostering Healthy Futures

Table E-36. Fostering healthy futures, study characteristics

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Taussig, 2010 ²⁷ Taussig, 2012 ²⁸	Colorado, U. S.	National Institute of Mental Health; Kempe Foundation, Pioneer Fund, Daniels Fund, Children's Hospital Research Institute	RCT	1, 2, 4	To determine if the interventions would result in better self-esteem, social support, social acceptance, and coping skills immediately following and if these improvements would be associated with improved quality of life in 6 mos	G1:Fostering Healthy Futures G2: Assessment-only (Control)	G1: 79 G2: 77	30 weeks each for both the skills group and the mentoring components provided over 11-13 months Follow-up: 6 mos post-intervention	placed in foster care by court order due to maltreatment within the preceding yr; currently resided in foster care within 35 min drive of skills group sites; lived with current caregiver for ≤ 3 wks; demonstrated adequate proficiency in English	No longer in foster care, info on child welfare records that made them ineligible (not further defined); developmentally delayed; not proficient enough in English

Table E-37. Fostering healthy futures, population characteristics

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age Mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
Taussig, 2010 ²⁷ Taussig, 2012 ²⁸	G1:Fostering Healthy Futures G2: Assessment-only (Control)	G1: 10.4 (0.9) G2: 10.4 (0.9)	G1: 48 G2: 51	% Caucasian G1: 42 G2: 44 % African American G1: 34 G2: 25 % other race (specify) G1: NR G2: NR	% Hispanic/Latino G1: 44 G2: 56 % NOT Hispanic/Latino G1: 56 G2: 44 % other ethnicity (specify) G1: NR G2: NR	Foster parents	NR	NR	NR	NR

Table E-38. Fostering healthy futures, population clinical characteristics

First Author, Year	Comparison Groups	Maltreatment Type	Number of Exposures, Duration of Exposure, Number of CPS Referrals	Child Clinical Presentation, % With MH Symptoms or Behavior Problem, % Meeting a Diagnosis	Caregiver Presentation % With MH Symptoms, % Meeting a Diagnosis
Taussig, 2010 ²⁷ Taussig, 2012 ²⁸	G1: Fostering Healthy Futures G2: Assessment-only (Control)	Physical abuse n (%) G1: 31 (39) G2: 19 (25) Sexual abuse n (%) G1: 7 (9) G2: 11 (14) Failure to provide neglect n (%) G1: 37 (47) G2: 40 (52) Lack of supervision neglect n (%) G1: 61 (77) G2: 57 (74) Emotional abuse n (%) G1: 45 (57) G2: 51 (66) Moral neglect, exposure to illegal activity n (%) G1: 32 (40) G2: 21 (27)	Number of exposures G1: NR G2: NR Duration of exposure G1: NR G2: NR Number of CPS referrals G1: 4.2 (4.8) G2: 3.2 (3.4)	% with MH symptoms or behavior problems G1: % NR (scores on outcome scales at baseline presented in results) G2: % NR (scores on outcome scales at baseline presented in results) % meeting a dx G1: NR G2: NR Received mental health therapy ever n (%) G1: 56 (71) G2: 55 (71) Received medication for mental health problems ever n (%) G1: 13 (17) G2: 11 (14) Received MH therapy in past month (caregiver report) n (%) G1: 50 (63) G2: 47 (64) Received medication for mental health problems in past month (caregiver report) G1: 9 (11) G2: 9 (12)	NR

Table E-39. Fostering healthy futures, intervention characteristics

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
Taussig, 2010 ²⁷ Taussig, 2012 ²⁸	G1:Fostering Healthy Futures G2: Assessment-only (Control)	G1: Skills group=30 times for 1.5 h/wk; Mentorship 30 times for 2-4 hrs/wk G2: NA	G1: Child G2: Child	G1: Clinicians & Graduate Student trainees G2: NA	G1: Yes G2: NA	G1: Skills Group=Group; Mentoring=Individual G2: NA	G1: Skills group=Out of Home assumed in the community; Mentoring =community G2: NA

Table E-40. Fostering healthy futures, mental health outcomes

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Taussig, 2010 ²⁷ Taussig, 2012 ²⁸	G1:Fostering Healthy Futures (N=74 at endpoint; N=76 at follow up) G2: Assessment-only (Control) [N= 68 at endpoint; N=68 at follow up]	Primary (based on child self-report on the posttraumatic stress and dissociation scales of the Trauma Symptom Checklist for Children and a multi-informant index of mental health problems based on principal components factor analysis of the children's mean scores on the Trauma Symptom Checklist for Children and the internalizing scales of the Child Behavior Checklist and the Teacher Report Form completed by children's caregivers and teachers): Mental Health symptoms factor including youth, caregiver and teacher report Youth reported trauma Symptoms Youth reported dissociation Youth reported QOL	Mental Health Symptoms factor including youth, caregiver and teacher report Baseline score mean (SD) G1: -0.03 (1.0) G2: 0.03 (1.0) Endpoint adjusted score mean (se) G1: 0.04 (0.11) G2: -0.04 (0.11) Adjusted Mean Difference (95% CI): 0.07 (-0.25 to 0.39) Cohen d (95% CI): 0.07 (-0.25 to 0.39) Between group, p= 0.66 Follow up adjusted score mean (se) G1: -0.25 (0.11) G2: 0.27 (0.12) Adjusted Mean Difference (95% CI): -0.51 (-0.84 to -0.19) Cohen d (95% CI): -0.51 (-0.84 to -0.19) Between group, p=0.003	Youth reported trauma Symptoms Baseline score mean (SD) G1: 47.7 (9.1) G2: 48.0 (9.5) Endpoint adjusted score mean (se) G1: 44.28 (1.12) G2: 45.33 (1.19) Adjusted Mean Difference (95% CI)=-1.05 (-4.33 to 2.33) Cohen d (95% CI): -0.10 (-0.43 to 0.22) Between group, p=0.53 Follow up adjusted score mean (se) G1: 41.36 (1.02) G2: 44.15 (1.08) Adjusted Mean Difference (95% CI)=-2.79 (-5.77 to 0.19) Cohen d (95% CI): -0.30 (-0.63 to 0.02) Between group, p=0.07	Youth reported dissociation: Baseline score mean (SD) G1: 48.7 (9.5) G2: 48.5 (9.7) Endpoint adjusted score mean (se) G1: 45.39 (1.07) G2: 46.64 (1.14) Adjusted Mean Difference (95% CI)=-1.24 (-4.39 to 1.90) Cohen d (95% CI): -0.13 (-0.45 to 0.19) Between group, p=0.44 Follow up adjusted score mean (se) G1: 42.30 (1.00) G2: 45.96 (1.06) Adjusted Mean Difference (95% CI)=-3.66 (-6.58 to -0.74) Cohen d (95% CI): -0.39 (-0.70 to -0.08) Between group, p=0.02 Youth reported QOL Baseline score mean (SD) G1: 2.7 (0.3) G2: 2.7 (0.3) Endpoint adjusted score mean (se) G1: 2.78 (0.03) G2: 2.66 (0.03) Adjusted Mean Difference (95% CI): 0.11 (0.03 to 0.19) Follow up adjusted score mean (se) G1: 2.78 (0.03) G2: 2.74 (0.03) p=0.006 Adjusted mean difference (95% CI): 0.04 (-0.05 to 0.13) Cohen d (95% CI) 0.14 (-0.17 to 0.45) p=0.38	Youth reported use of MH services Received MH therapy ever Baseline No. (%) G1: 56 (71) G2: 55 (71) Recent MH therapy,adjusted endpoint % G1: 63 G2: 71 RR (95% CI): 0.88 (0.70 to 1.11) Between group, p= 0.28 Recent MH therapy,adjusted follow up % G1: 53 G2: 10 RR (95% CI): 0.75 (0.57 to 0.98) Between group, p=0.04 Youth reported use of psychotropic meds services Received medication for MH problems ever, Baseline No. (%) G1: 13 (17) G2: 11 (14) Recent MH psychotropic meds adjusted endpoint, % G1: 9 G2: 14 RR (95% CI): 0.65 (0.33 to 1.29) Between group, p= 0.22 Recent MH psychotropic meds adjusted Follow up % G1: 10 G2: 15

Table E-40. Fostering healthy futures, mental health outcomes (continued)

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Taussig, 2010 ²⁷ Taussig, 2012 ²⁸ (continued)	G1:Fostering Healthy Futures (N=74 at endpoint; N=76 at follow up) G2: Assessment-only (Control) [N= 68 at endpoint; N=68 at follow up]	Youth reported recent MH therapy Youth reported recent MH medications acceptance Youth r Primary (continued): Mental Health symptoms factor including Caregiver reported current MH therapy Caregiver reported current MH medications Secondary (all child self-report): Youth report positive coping Youth report negative coping Youth report global self-worth Global Self-worth	Caregiver reported use of MH services Received MH therapy in past month Baseline No. (%) G1: 50 (63) G2: 47 (64) Current MH therapy, adjusted Endpoint % G1: 55 G2: 68 RR (95% CI): 0.81 (0.62 to 1.06) Between group, p= 0.12 Current MH therapy adjusted Follow up % G1: 48 G2: 58 RR (95% CI): 0.82 (0.59 to 1.12) Between group, p=0.21	Caregiver reported use of psychotropic meds services Received medication for MH problems in past mos. Baseline No. (%) G1: 9 (11) G2: 9 (12) Current MH psychotropic medication adjusted Endpoint score % G1: 13 G2: 12 RR (95% CI): 1.07 (0.59 to 1.94) Between group, p= 0.83 Current MH psychotropic medication adjusted Follow up score % G1: 10 G2: 17 RR (95% CI): 0.61 (0.30 to 1.27) Between group, p=0.18	Secondary outcomes: Youth reported positive coping Baseline score mean (SD) G1: 2.0 (0.4) G2: 1.9 (0.4) Endpoint adjusted score mean (se) G1: 1.96 (0.04) G2: 1.93 (0.04) Adjusted Mean Difference (95% CI) =-0.03 (-0.08 to 0.14) Cohen d (95% CI): 0.09 (0.22 to 0.39) Between group, p=0.59 Follow up adjusted score mean (se) G1: 2.00 (0.04) G2: 1.92 (0.04) Adjusted Mean Difference (95% CI): 0.09 (-0.03 to 0.20) Cohen d (95% CI) 0.25 (-0.09 to 0.58) Between group, p=0.15 Youth reported negative coping Baseline score mean (SD) G1: 1.2 (0.2) G2: 1.2 (0.2) Endpoint adjusted score mean (se) G1: 1.21 (0.02) G2: 1.22 (0.02) Adjusted Mean Difference (95% CI): -0.01 (-0.07 to 0.04) Cohen d (95% CI): -0.08 (-0.41 to 0.25) Between group, p=0.64	RR (95% CI): 0.67 (0.34 to 1.31) Between group, p=0.25 Youth reported global self-worth Baseline score mean (SD) G1: 3.5 (0.60) G2: 3.4 (0.6) Endpoint adjusted score mean (se) G1: 3.47 (0.06) G2: 3.44 (0.07) Adjusted Mean Difference (95% CI): 0.03 (-0.15 to 0.21) Cohen d (95% CI): 0.05 (-0.25 to 0.34) Between group, p=0.76 Follow up adjusted score mean (se) G1: 3.58 (0.06) G2: 3.48 (0.06) Adjusted Mean Difference (95% CI)=0.10 (-0.06 to 0.27) Cohen d (95% CI) 0.19 (-0.12 to 0.50) Between group, p=0.23

Table E-40. Fostering healthy futures, mental health outcomes (continued)

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Taussig, 2010 ²⁷ Taussig, 2012 ²⁸ (continued)		Secondary (continued): Youth report social support factor (child report) Social Acceptance (Self Perception Profile for Children)	Youth report social support factor Baseline score mean (SD) G1: 0.13 (1.0) G2: -0.14 (1.0) Endpoint adjusted score mean (se) G1: 0.12 (0.10) G2: -0.13 (0.11) Adjusted Mean Difference (95% CI): 0.25 (-0.05 to 0.54) Cohen d (95% CI): 0.25 (-0.05 to 0.54) Between group, p=0.10 Follow up adjusted score mean (se) G1: 0.00 (0.11) G2: -0.02 (0.12) Adjusted Mean Difference (95% CI): 0.02 (-0.31 to 0.36) Cohen d (95 % CI): 0.02 (-0.31 to 0.36) Between group, p=0.89	Youth reported social acceptance Baseline score mean (SD) G1: 3.2 (0.8) G2: 3.0 (0.8) Endpoint adjusted score mean (se) G1: 3.20 (0.08) G2: 3.08 (0.09) Adjusted Mean Difference (95% CI): 0.12 (-0.12 to 0.36) Cohen d (95% CI) 0.16 (-0.15 to 0.48) Between group, p=0.32 Follow up adjusted score mean (se) G1: 3.30 (0.07) G2: 3.20 (0.07) Adjusted Mean Difference (95% CI): 0.11 (-0.10 to 0.31) Cohen d (95 % CI): 0.17 (-0.15 to 0.48) Between group, p=0.30	Follow up adjusted score mean (se) G1: 1.20 (0.02) G2: 1.25 (0.02) Adjusted Mean Difference (95% CI): -0.04 (-0.10 to 0.02) Cohen d (95% CI) -0.21 (-0.51 to 0.08) Between group, p=0.16	None

Table E-41. Fostering healthy futures, child welfare outcomes

First Author, Year	Comparison Groups	Safety	Placement Stability	Permanency
Taussig, 2012 ²⁸	G1:Fostering Healthy Futures G2: Assessment-only (Control)	NR	<p>Mean placement changes, Total sample N=110 (unadjusted for covariates. Covariates included # of foster care placements pre-intervention, whether child placed in residential treatment center pre-intervention, type of baseline placement, and baseline externalizing behavior problems)</p> <p>G1: 0.71 G2: 1.11 Incidence ratio (IR) (95% CI): 0.64 (0.35 to 1.19), p=0.16 Mean placement changes, Total sample (adjusted for covariates) G1: 0.73 G2: 1.08 IR (95% CI): 0.68 (0.40 to 1.16), p=0.17 Mean placement changes, Foster Care sample N=61 (unadjusted for covariates) G1: 0.73 G2: 1.45 IR (95% CI): 0.51 (0.27 to 0.95), p=0.04 Mean placement changes, Foster Care sample N=61 (adjusted for covariates) G1: 0.67 G2: 1.21 IR (95% CI): 0.56 (0.34 to 0.93), p=0.03</p>	<p>% Achieving permanency, Total sample (unadjusted for covariates) G1: 57.1% G2: 44.4% OR (95% CI): 1.67 (0.78 to 3.54), p=0.18 % Achieving permanency, Total sample (adjusted for covariates) G1: 65.0% G2: 50.6% OR (95% CI): 1.81 (0.77 to 4.22), p=0.17 % Achieving permanency, Foster Care sample N=61 (unadjusted for covariates) G1: 50.0% G2: 16.1% OR (95% CI): 5.20 (1.57 to 17.18), p=0.004 % Achieving permanency, Foster Care sample N=61 (unadjusted for covariates) G1: 49.8% G2: 16.2% OR (95% CI): 5.14 (1.55 to 17.07), p=0.005</p>

Table E-41. Fostering healthy futures, child welfare outcomes (continued)

First Author, Year	Comparison Groups	Safety	Placement Stability	Permanency
Taussig, 2012 ²⁸	G1:Fostering Healthy Futures G2: Assessment-only (Control)	NR	<p>% Any residential treatment center (RTC) placement, Total sample (unadjusted for covariates) G1: 10.7% G2: 24.1% IOR (95% CI): 0.38 (0.13 to 1.08), p=0.06</p> <p>% Any residential treatment center (RTC) placement, Total sample (adjusted for covariates) G1: 8.2% G2: 23.5% OR (95% CI): 0.29 (0.09 to 0.98), p=0.04</p> <p>% Any residential treatment center (RTC) placement, Foster Care sample N=61 (unadjusted for covariates) G1: 10.0% G2: 32.3% OR (95% CI): 0.23 (0.06 to 0.96), p=0.03</p> <p>% Any residential treatment center (RTC) placement, Foster Care sample N=61 (adjusted for covariates) G1: 4.4% G2: 20.7% OR (95% CI): 0.18 (0.03 to 0.96), p=0.03</p>	<p>% Children with termination of parental rights (TPR) who were adopted 1-year post-intervention, N=32 G1: 26% G2: 8% p=NA (subsample N “too small for conventional statistical tests”)</p> <p>% Children without TPR who reunified 1-year post-intervention, N=78 G1: 51% G2: 29% P<0.05</p> <p>% Foster Care sample without TPR who reunified 1-year post-intervention, N=42 G1: 57% G2: 24% p=0.03</p>

Group Psychotherapy for Sexually Abused Girls

Table E-42. Group psychotherapy for sexually abused girls, study characteristics

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Trowell, 2002 ²⁹	London, England	Government: Department of Health and the Mental Health Foundation	RCT	1, 4	To compare the relative efficacy of group or individual psychotherapy in treating symptomatic sexually abused girls	G1: Group psychotherapy G2: Individual psychotherapy	G1: 36 G2: 35	G1: Up to 18 sessions, assessment at 1-yr and follow-up at 2- yrs G2: Once weekly sessions for up to 30 sessions, assessment at 1-yr and follow-up at 2- yrs face-to-face therapy time was the same for G1 and G2	Contact sexual abuse had occurred "on the basis of balance of probabilities", verified by social services and/or court procedure; School-aged girls (6-14 years of age); Consented to participate in the study given by the child and child's legal guardian; Symptoms of emotional or behavioral disturbance warranting treatment present; Abuse had been disclosed within 2 years prior to referral, regardless of when the abuse actually occurred	Severe developmental delay; Psychosis; Lack of reasonable confidence that further abuse would not occur; Necessity for hospitalization at time of initial evaluation; Other clinical or legal issues on a case-by-case basis

Table E-43. Group psychotherapy for sexually abused girls, population characteristics

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age Mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
Trowell, 2002 ²⁹	G1: Group psychotherapy G2: Individual psychotherapy	G1: 10.4 (2.0) G2: 9.7 (2.4)	G1: 100% G2: 100%	% Caucasian Overall N: 63% G1: NR G2: NR % African American Overall N: 11% G1: NR G2: NR % other race - Asian Overall N: 7% G1: NR G2: NR % other race - Mixed parentage Overall N: 10% G1: NR G2: NR	% Hispanic/Latino G1: NR G2: NR % NOT Hispanic/Latino G1: NR G2: NR % other ethnicity - Mediterranean Overall N: 6% G1: NR G2: NR % other ethnicity - Unknown origin Overall N: 3% G1: NR G2: NR	Mixed: Biological parents, foster parents, group home guardians G1: NR G2: NR	G1: NR G2: NR	G1: NR G2: NR	% Caucasian G1: NR G2: NR % African American G1: NR G2: NR % other race (specify) G1: NR G2: NR	% Hispanic/Latino G1: NR G2: NR % NOT Hispanic/Latino G1: NR G2: NR % other ethnicity (specify) G1: NR G2: NR

Table E-44. Group psychotherapy for sexually abused girls, population, clinical characteristics

First Author, Year	Comparison Groups	Maltreatment Type	Number of Exposures, Duration of Exposure, Number of CPS Referrals	Child Clinical Presentation, % With MH Symptoms or Behavior Problem, % Meeting a Diagnosis	Caregiver Presentation % With MH Symptoms, % Meeting a Diagnosis
Trowell, 2002 ²⁹	G1: Group psychotherapy G2: Individual psychotherapy	Sexual Abuse	Number of exposures (more than 10 abuse incidents) (N of participants, %) G1: 17 (47%) G2: 22 (63%) Duration of exposure (more than 2 years' duration) (N, %) G1: 13 (36%) G2: 14 (40%) More than one abuser (N, %) G1: 13 (36%) G2: 15 (43%) Number of CPS referrals G1: NR G2: NR	% with MH symptoms or behavior problems G1: NR G2: NR % meeting a dx G1: NR G2: NR PTSD Total N: 73% G1: NR G2: NR General anxiety dx Total N: 37% G1: NR G2: NR Major depressive dx Total N: 57% G1: NR G2: NR Separation anxiety dx Total N: 58% G1: NR G2: NR	% with MH symptoms/substance abuse NR % meeting a dx NR

Table E-45. Group psychotherapy for sexually abused girls, intervention characteristics

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
Trowell, 2002 ²⁹	G1: Group psychotherapy G2: Individual psychotherapy	G1: Up to 18 sessions G2: Focused 50-minute sessions once weekly for up to 30 sessions same face-to-face contact time for G1 and G2 despite different number of total sessions	G1: Child primary target; caregiver also received support in a group context G2: Child primary target; caregiver also received support in an individual context	G1: Co-therapists: Trainee psychotherapists or experienced mental health professionals G2: One therapist: Trainee psychotherapists or experienced mental health professional (always the same)	G1: Yes (manual and close supervision by trained therapists) G2: Yes (manual and close supervision by trained therapists)	G1: Group G2: Individual	G1: Either community clinic in south London or tertiary clinic in north London G2: Either community clinic in south London or tertiary clinic in north London

Table E-46. Group psychotherapy for sexually abused girls, mental health outcomes

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Trowell, 2002 ²⁹	G1: Group psychotherapy G2: Individual psychotherapy	Shortened version of the Kiddie Schedule for Affective Disorders and Schizophrenia for School-aged Children (K-SADS) (Clinical Assessment) The K-SADS provided data for coding the Kiddie Global Assessment Scale (K-GAS) (Clinical Assessment) Orvaschel's 1989 PTSD Scale (Clinical Assessment)	K-GAS (impairment measure): Baseline score mean (SD) G1: 4.89 (1.01) G2: 5.14 (1.37) p=NR (95% CI G1=4.55-5.23, G2=4.67-5.6) Endpoint (1-yr) score mean change (SD) G1: 1.38 (1.37) G2: 1.48 (1.57) p=NR (95% CI G1=0.86-1.90 G2=0.88-2.08) Follow up (2-yr) score mean change (SD) G1: 1.62 (1.47) G2: 1.54 (1.37) p=NR (95% CI G1=1.02-2.21 G2=1.00-2.07)	PTSD severity - re-experience of trauma: Baseline score mean (SD) G1: 7.0 (2.18) G2: 7.9 (2.14) Change score mean (SD) (1-yr follow-up - increase from baseline) G1: 0.50 (2.5) G2: 1.82 (2.4) Between group, p=NR (effect size Cohen d=0.60) Change score mean (SD) (increase from baseline) G1: 0.22 (2.28) G2: 1.96 (2.08) Between group, p=NR (effect size, cohen d=0.79)	PTSD severity - persistent avoidance of stimuli: Baseline score mean (SD) G1: 10.0 (1.80) G2: 10.2 (1.56) Change score mean (SD) (1-yr follow-up - increase from baseline) G1: 1.5 (2.7) G2: 2.6 (2.2) Between group, p=NR (effect size cohen d= 0.66) Change score mean (SD) (increase from baseline) G1: 1.5 (1.8) G2: 2.1 (2.3) Between group, p=NR (effect size cohen d= 0.36)	PTSD – persistent symptoms of increased arousal Between group effect sizes never achieved 0.5 (authors used 0.5 as the criterion of medium effect). These data were not subjected to further analysis.

Group Treatment Program for Sexual Abuse

Table E-47. Group treatment program for sexual abuse, study characteristics

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
McGain, 1995 ³⁰	California, USA	NR	Non-randomized controlled trial (NRCT)	1, 4	To reduce psychological distress and symptomatology in a sample of 9-12 year old sexually abused girls	G1: Immediate treatment G2: Waitlist	Overall: 30 G1: 15 G2: 15	6 months	Girls in a treatment program for sexual abuse victims	Girls with elevated scores on the Quay Revised Behavioral Problem Checklist's (RBPC) Psychotic Behavior scale

Table E-48. Group treatment program for sexual abuse, population characteristics

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age Mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
McGain, 1995 ³⁰	G1: Immediate treatment G2: Waitlist	Overall: 10.5 (1.21); Range: 9-12 G1: NR G2: NR	100%	NR	NR	Parents and other caregivers	NR	NR	NR	NR

Table E-49. Group treatment program for sexual abuse, population clinical characteristics

First Author, Year	Comparison Groups	Maltreatment Type	Number of Exposures, Duration of Exposure, Number of CPS Referrals	Child Clinical Presentation, % With MH Symptoms or Behavior Problem, % Meeting a Diagnosis	Caregiver Presentation % With MH Symptoms, % Meeting a Diagnosis
McGain, 1995 ³⁰	G1: Immediate treatment G2: Waitlist	Sexual abuse: 100%	TN	NR	NR

Table E-50. Group treatment program for sexual abuse, intervention characteristics

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
McGain, 1995 ³⁰	G1: Immediate treatment G2: Waitlist	G1: Once weekly over a 6-month period; after this initial intervention, children attend several cycles of the group for about 9 months to 1 year G2: NA	Child	NR	G1: NR G2: NR	G1: Group G2: NA	G1: Outpatient clinic G2: NA

Table E-51. Group treatment program for sexual abuse, mental health outcomes

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
McGain, 1995 ³⁰	G1: Immediate treatment G2: Waitlist	Quay RBPC; ECBI	Academic and concentration problems Mean (SD); %s in normal range RBPC Anxiety-Withdrawal Pretest G1: 72.40 (7.42); 7% G2: 73.00 (8.04); 7% p=.8334 Posttest G1: 55.53 (8.47); 67% G2: 72.47 (8.38); 13% Within groups differences: G1: p<.0001 G2: p=.0148 Btwn groups difference: p<.0001 Attention Problems-Immaturity Pretest G1: 66.60 (4.53); 0% G2: 68.00 (5.38); 0% Posttest G1: 49.20 (5.02); 100% G2: 67.47 (5.36); 0% Within groups differences: G1: p<.0001 G2: p=.0406 Btwn groups difference: p<.0001	Academic difficulties (continued) RBPC Motor Excess Pretest G1: 63.93 (11.12); 40% G2: 66.80 (10.21); 60% Posttest G1: 50.13 (4.03); 100% G2: 66.40 (9.86); 60% Within groups differences: G1: p=.0004 G2: p=.0824 Btwn groups difference: p<.0001	Misbehavior problems Mean (SD); %s in normal range RBPC Conduct Disorder Pretest G1: 64.40 (11.13); 27% G2: 65.33 (10.93); 37% Posttest G1: 51.33 (5.35); 93% G2: 64.60 (11.34); 37% Within groups differences: G1: p=.001 G2: p=.0516 Btwn groups difference: p<.0001 Socialized Aggression Pretest G1: 63.00 (7.92); 20% G2: 63.60 (8.36); NR Posttest G1: 49.73 (8.68); 80% G2: 63.20 (8.10); NR Within groups differences: G1: p<.0001 G2: p=.0824 Btwn groups difference: p<.0001 Psychotic Behavior Pretest G1: 52.93 (9.99); 86% G2: 52.53 (8.67); NR Posttest G1: 48.00 (0.00); 100% G2: 52.13 (8.30); NR Within groups differences: G1: p=.0766 G2: p=.1887 Btwn groups difference: p=.2124	Misbehavior problems (continued) Mean (SD); %s in normal range ECBI Intensity of Behavior Pretest G1: 168.80 (35.45); 7% G2: 168.07 (41.98); 13% Posttest G1: 67.80 (15.59); 100% G2: 167.60 (41.72); 27% Within groups differences: G1: p<.0001 G2: p=.1306 Btwn groups difference: p<.0001 Problem Behavior Pretest G1: 26.80 (20.55); 13% G2: 25.93 (21.09); 27% Posttest G1: 3.93 (3.83); 100% G2: 25.20 (20.89); 27% Within groups differences: G1: p=.0003 G2: p=.0012 Btwn groups difference: p=.001

Incredible Years Adaptation

Table E-52. Incredible years, study characteristics

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Linares, 2006 ³¹	New York City, New York	Government (SAMHSA & NIH)	RCT	1, 4	To evaluate an adaptation of the Incredible Years intervention to promote positive parenting (Incredible Years) in which a collaborative co-parenting component is also included for biological & foster parents, compared with a standard usual care condition	G1: Adaptation of IY pgm. Parenting component addresses play, praise & rewards, effective limit setting, handling misbehavior, & placement issues (e.g., safety, attachment). Strategies: videotaped vignettes, role plays, homework. Co-parenting component uses systems strategies (e.g., joining, reenactment, restructuring) to address knowledge of each other & child, open communication, negotiating interparental conflict. G2: Usual care via child welfare agency or other local facilities, such as drug treatment or mental health G2: Usual care	Biological/ foster parents G1: 80 G2: 48 Children G1: 40 G2: 24	Post Intervention: Once, immediately after intervention at 3 months post-baseline; Follow-up: Once, 3 months after end of intervention	Biological & foster parents whose foster children had: Substantiated history of child maltreatment; Residence in nonkinship foster home; Official Child Protective Services (CPS) goal of family reunification	Children with: Documented developmental disabilities; Official report of sexual abuse; Biological or foster parents who had: Known mental handicap; Inability to speak English or Spanish; in long-term foster care (>24 months) [noted in Discussion]

Table E-53. Incredible years adaptation, population characteristics

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age Mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
Linares, 2006 ³¹	G1: Two-component IY G2: Usual care	Overall N: 6.2 (2.3); 3-10 G1: NR G2: NR	G1: NR G2: NR	% Caucasian G1: NR G2: NR % African American G1: NR G2: NR % other race (specify) G1: NR G2: NR	% Hispanic/Latino G1: NR G2: NR % NOT Hispanic/Latino G1: NR G2: NR % other ethnicity (specify) G1: NR G2: NR	Biological and foster parents Randomized as pairs: G1: 40 pairs G2: 24 pairs Parent pairs received intervention together with children. Biological: n=63 Foster: n=63	Biological parents Total N mean (SD): 32.10 (7.70) G1: NR G2: NR Foster parents Total N mean (SD): 46.2 (9.1) G1: NR G2: NR Parental age differed significantly by parent type p=0.00	Biological Total N: 89% G1: NR G2: NR Foster Total N: 98% G1: NR G2: NR	All caregivers % African American Total N: 33% % other race (Latino) Total N: 57% Race by parent type Biological % African American: 31% % other race (Latino): 53% % other race (not specified): 16% Foster % African American: 34% % other race (Latino): 61% % other race (not specified): 5%	All caregivers % Hispanic/Latino Total N: 57% Ethnicity by parent type Biological % Hispanic/Latino: 53% % NOT Hispanic/Latino: NR % other ethnicity: 16% Foster % Hispanic/Latino: 61% % NOT Hispanic/Latino: NR % other ethnicity: 5%

Table E-54. Incredible years adaptation, population clinical characteristics

First Author, Year	Comparison Groups	Maltreatment Type	Number of Exposures, Duration of Exposure, Number of CPS Referrals	Child Clinical Presentation, % With MH Symptoms or Behavior Problem, % Meeting a Diagnosis	Caregiver Presentation % With MH Symptoms, % Meeting a Diagnosis
Linares, 2006 ³¹	G1: Two-component IY G2: Usual care	Total N: Neglect (83%) broken down by the following categories: lack of supervision (29%), failure to protect (exposure to DV, 26%), failure to provide (19%), emotional (10%), and moral/legal/educational (7%); 6% abused (12% of 'abused' were exposed to physical abuse and 7% of 'abused' were exposed to sexual abuse);and 11% were undetermined. G1: NR G2: NR	Number of exposures G1: NR G2: NR Duration of exposure G1: NR G2: NR Number of CPS referrals G1: NR G2: NR	% with MH symptoms or behavior problems CBCL T scores \geq or=60 at baseline as reported by biological parents: 37% As reported by foster parents: 57% ECBI total T scores > or=to 60 at baseline as reported by biological parents: 21% As reported by foster parents: 31% Total T score > or=60 at baseline as reported by teachers (for Total N): 31% G1: NR G2: NR % meeting a dx G1: NR G2: NR	% with MH symptoms/substance abuse NR % meeting a dx NR

Table E-55. Incredible years adaptation, intervention characteristics

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
Linares, 2006 ³¹	G1: Two-component IY G2: Usual care	G1: Parenting component- 12 weekly 2-hr group sessions conducted by two facilitators Co-parenting component – 12 approx 1-hr weekly sessions with individual family (bio and foster caregiver and child) G2: N/A	G1: Bio parent and foster parent pairs G2: Bio parent, foster parent, child	G1: Bilingual (English/Spanish) team of parent leaders from the agency mental health unit. Parent leaders rec'd a 3-day initial training from IY staff and from a family therapy trainer from the Center for Family Studies at the University of Miami; the study principal investigator and agency staff also spent addtl time reviewing and practicing the sessions for a total of 70 training hrs prior to initiating the intervention. G2: Service providers at the agency and other local facilities (e.g., drug treatment, mental health). To guard against contamination, parent leaders were asked not to use learned techniques in their clinical work with participants outside of the intervention.	G1: Yes G2: No	G1: Groups of 4-7 biological-foster parent pairs; individual sessions with biological and foster parent pair and child. G2: NR	G1: Child welfare agency; intervention training and implementation monitoring conducted by university team G2: Child welfare agency or other local facilities (e.g., drug tx, mental health)

Table E-56. Incredible years adaptation, mental health outcomes

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Linares, 2006 ³¹	G1: Two-component IY G2: Usual care	<p>Child Behavior Checklist: Parent Report (CBCL)</p> <p>Eyberg Child Behavior Inventory (ECBI); Parent Report</p> <p>Sutter-Eyberg Student Behavior Inventory-Revised (SESBI-R); Teacher Report</p>	<p>Behavioral/externalizing problems: CBCL-E Externalizing Scale T score</p> <p>Baseline score, by caregiver type</p> <p>Mean (SD)</p> <p>Biological parents: 57.10 (14.50)</p> <p>Foster parents: 59.30 (11.00)</p> <p>Intraclass correlation (ICC)=0.25</p> <p>Between group, p=0.32</p> <p>Baseline, by treatment group (combined across caregiver type)</p> <p>Mean (SD)</p> <p>G1: NR</p> <p>G2: NR</p> <p>Between group, p=ns (nr)</p> <p>Post-Intervention score, by treatment group (combined across caregiver type)</p> <p>Mean (95% CI)</p> <p>G1: 56.37 (54.53-58.21)</p> <p>G2: 57.33 (54.78-59.87)</p> <p>Effect size (d)=0.14</p> <p>Between group, p=ns (nr)</p>	<p>Externalizing and conduct problems: ECBI Total T Score</p> <p>Baseline score, by caregiver type</p> <p>Mean (SD)</p> <p>Biological parents: 49.90 (10.70)</p> <p>Foster parents: 53.50 (12.00)</p> <p>ICC= 0.24</p> <p>Between group, p=0.07</p> <p>Baseline, by treatment group (combined across caregiver type)</p> <p>Mean (SD)</p> <p>G1: NR</p> <p>G2: NR</p> <p>Between group, p=ns (nr)</p> <p>Post-Intervention score, by treatment group (combined across caregiver type)</p> <p>Mean (95% CI)</p> <p>G1: 49.94 (48.20-51.68)</p> <p>G2: 51.69 (49.33-54.04)</p> <p>Effect size (d)=.023</p> <p>Between group, p=ns (nr)</p>	<p>Disruptive classroom behaviors: SESBI-R total T score</p> <p>Baseline score, across caregiver types</p> <p>Mean (SD)</p> <p>54.70 (11.40)</p> <p>ICC=0.20</p> <p>Post-Intervention score, by treatment group (combined across caregiver type)</p> <p>Mean (95% CI) G1: 55.74 (51.99-59.48)</p> <p>G2: 55.24 (51.02-59.47)</p> <p>Effect size (d)=0.05</p> <p>Between group, p=ns (nr)</p> <p>Follow up: 3 months post intervention end score, by treatment group (combined across caregiver type)</p> <p>mean (95% CI)</p> <p>G1: 56.71 (51.19-62.23)</p> <p>G2: 53.08 (45.27-60.89)</p> <p>Effect size (d)=.032</p> <p>Between group, p=ns (nr)</p>	<p>No significant Condition x Parent interaction</p> <p>p=NR</p>

Table E-56. Incredible years adaptation, mental health outcomes (continued)

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Linares, 2006 (continued) ³¹	G1: Two-component IY G2: Usual care	Child Behavior Checklist: Parent Report (CBCL) Eyberg Child Behavior Inventory (ECBI); Parent Report Sutter-Eyberg Student Behavior Inventory-Revised (SESBI-R); Teacher Report	Behavioral/externalizing problems: CBCL-E Externalizing Scale T score (continued) Follow up: 3 months post intervention end score, by treatment group (combined across caregiver type) mean (95% CI) G1: 57.47 (55.26-59.69) G2: 60.82 (57.65-63.98) Effect size (d)=0.36 Between group, p=ns (nr)	Externalizing and conduct problems: ECBI Total T Score (continued) Follow up: 3 months post intervention end score, by treatment group (combined across caregiver type) mean (95% CI) G1: 50.33 (48.20-52.45) G2: 53.43 (50.40-56.46) Effect size (d)=0.33 Between group, p=ns (nr)	None	None

Table E-57. Incredible years adaptation, healthy caregiver child relationship outcomes

First Author, Year	Comparison Groups	Measures	Caregiver-Child Relationship	Caregiver-Child Relationship (Part 2)	Caregiver-Child Relationship (Part 3)	Caregiver-Child Relationship (Part 4)
Linares, 2006 ³¹	G1: Two-component IY G2: Usual care	Parenting Practices Interview (PPI); Parent Self-Report	<p>Positive Discipline Scale: Baseline score, by caregiver type Mean (SD) Biological parents: 4.80 (0.85) Foster parents: 4.60 (0.76) Intraclass correlation (ICC)=0.15 Between group, $p=0.13$</p> <p>Baseline, by treatment group (combined across caregiver type) Mean (SD) G1: NR G2: NR Between group, $p=ns$ (nr)</p> <p>Post-Intervention score, by treatment group (combined across caregiver type) Mean (95% CI) G1: 4.95 (4.80-5.11) G2: 4.71 (4.50-4.92) Effect size (d): 0.40 Between group, $p<0.05$</p>	<p>Appropriate Discipline Scale: Baseline score, by caregiver type Mean (SD) Biological parents: 4.90 (1.10) Foster parents: 4.40 (0.88) ICC=0.03 Between group, $p=.01$ Baseline, by treatment group (combined across caregiver type) Mean (SD) G1: NR G2: NR Between group, $p=ns$ (nr) Post-Intervention score, by treatment group (combined across caregiver type) Mean (95% CI) G1: 4.63 (4.40-4.85) G2: 4.78 (4.48-5.08) Effect size (d): 0.23 Between group, $p=ns$ (nr)</p>	<p>Clear Expectations Scale: Baseline score, by caregiver type Mean (SD) Biological parents: 5.80 (0.94) Foster parents: 6.10 (0.77) ICC=0.24 Between groups, $p=.06$</p> <p>Baseline, by treatment group (combined across caregiver type) Mean (SD) G1: NR G2: NR Between group, $p=ns$ (nr) Post-Intervention score, by treatment group (combined across caregiver type) Mean (95% CI) G1: 6.05 (5.88-6.22) G2: 6.12 (5.89-6.35) Effect size (d)=0.04 Between group, $p=ns$ (nr)</p>	<p>Harsh Discipline Scale: Baseline score, by caregiver type Mean (SD) Biological parents: 2.20 (0.82) Foster parents: 1.80 (0.57) ICC=.00 Between group, $p=.00$</p> <p>Post-Intervention score, by treatment group (combined across caregiver type) Mean (95% CI) G1: 1.82 (1.69-1.96) G2: 1.87 (1.68-2.06) Effect size (d)=0.09 Between group, $p=ns$ (nr)</p>

Table E-57. Incredible years adaptation, healthy caregiver child relationship outcomes (continued)

First Author, Year	Comparison Groups	Measures	Caregiver-Child Relationship	Caregiver-Child Relationship (Part 2)	Caregiver-Child Relationship (Part 3)	Caregiver-Child Relationship (Part 4)
Linares, 2006 ³¹ (continued)	G1: Two-component IY G2: Usual care		Follow up: 3 months post intervention end score, by treatment group (combined across caregiver type) Mean (95% CI) G1: 4.93 (4.76-5.11) G2: 4.54 (4.30-4.77) Effect size (d)=0.59 Between group, P:<0.01 Condition x Parent Interaction Biological (mean)=5.06 Foster (mean)=4.36 p<0.05	Follow up: 3 months post intervention end score, by treatment group (combined across caregiver type) Mean (95% CI) G1: 4.78 (4.52-5.03) G2: 4.81 (4.47-5.15) Effect size (d)=0.01 Between group, p=ns (nr)	Follow up: 3 months post intervention end score, by treatment group (combined across caregiver type) Mean (95% CI) G1: 6.27 (6.09-6.45) G2: 5.91 (5.66-6.15) Effect size (d)=0.54 Between group, P:<0.05	Follow up: 3 months post intervention end score, by treatment group (combined across caregiver type) Mean (95% CI) G1: 1.92 (1.77-2.07) G2: 2.04 (1.83-2.25) Effect size (d)=0.20 Between group, p=ns (nr)
Linares, 2006 ³¹ (continued)	G1: IY G2: Usual care	Family Functioning Style Scale (FFSS); Parent Self-Report	Flexibility in the co-parenting relationship: Baseline score, by caregiver type Mean (SD) Biological parents: 11.50 (5.30) Foster parents: 11.40 (4.00) Intraclass correlation (ICC)=0.17 Between group, p=.90 Baseline, by treatment group (combined across caregiver type) Mean (SD) G1: NR G2: NR	Mutual social support in the co-parenting relationship: Baseline score, by caregiver type Mean (SD) Biological parents: 15.70 (7.10) Foster parents: 12.70 (6.20) ICC=0.20 Between group, p=.01 Baseline, by treatment group (combined across caregiver type) Mean (SD) G1: NR G2: NR	Problem solving in the co-parenting relationship: Baseline score, by caregiver type Mean (SD) Biological parents: 8.2 (3.9) Foster parents: 7.60 (3.60) ICC=0.39 Between group, p=0.25 Baseline, by treatment group (combined across caregiver type) Mean (SD) G1: NR G2: NR	Total Composite score: Baseline score, by caregiver type Mean (SD) Biological parents: 35.80 (15.20) Foster parents: 31.80 (12.60) ICC=0.26 Between group, p=0.09 Baseline, by treatment group (combined across caregiver type) Mean (SD) G1: NR G2: NR Between group, p=ns (nr)

Table E-57. Incredible years adaptation, healthy caregiver child relationship outcomes (continued)

First Author, Year	Comparison Groups	Measures	Caregiver-Child Relationship	Caregiver-Child Relationship (Part 2)	Caregiver-Child Relationship (Part 3)	Caregiver-Child Relationship (Part 4)
Linares, 2006 ³¹ (continued)	G1: IY G2: Usual care		<p>Between group, p=ns (nr)</p> <p>Post-Intervention score, by treatment group (combined across caregiver type) Mean (95% CI) G1: 12.58 (11.63-13.52) G2: 11.48 (10.24-12.71) Effect size (d)=0.42 Between group, p<0.05</p> <p>Follow up: 3 months post intervention end score, by treatment group (combined across caregiver type) Mean (95% CI) G1: 15.10 (13.60-16.61) G2: 14.58 (12.32-16.84) Effect size (d)=0.10 Between group, p=ns (nr)</p>	<p>Between group, p=ns (nr)</p> <p>Post-Intervention score, by treatment group (combined across caregiver type) Mean (95% CI) G1: 15.43 (13.83-17.02) G2: 14.37 (12.23-16.52) Effect size (d)=0.34 Between group, p=ns (nr)</p> <p>Follow up: 3 months post intervention end score, by treatment group (combined across caregiver type) Mean (95% CI) G1: 12.03 (11.02-13.05) G2: 11.78 (10.29-13.28) Effect size (d)=0.05 Between group, p=ns (nr)</p>	<p>Between group, p=ns (nr)</p> <p>Post-Intervention score, by treatment group (combined across caregiver type) Mean (95% CI) G1: 8.86 (8.06-9.65) G2: 7.98 (6.93-9.03) Effect size (d)=0.52 Between group, p<0.05</p> <p>Follow up: 3 months post intervention end score, by treatment group (combined across caregiver type) Mean (95% CI) G1: 8.72 (7.94-9.49) G2: 8.48 (7.33-9.63) Effect size (d)=0.00 Between group, p=ns (nr)</p>	<p>Post-Intervention score, by treatment group (combined across caregiver type) Mean (95% CI) G1: 37.20 (34.05-40.34) G2: 33.85 (29.65-38.05) Effect size (d)=0.48 Between group, p<0.05</p> <p>Follow up: 3 months post intervention end score, by treatment group (combined across caregiver type) Mean (95% CI) G1: 36.02 (32.92-39.13) G2: 34.73 (30.10-39.35) Effect size (d)= 0.06 Between group, p=ns (nr)</p>

Keeping Foster Parents Trained and Supported

Table E-58. Keeping foster parents trained and supported, study characteristics

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Chamberlain, 2008 ³²	San Diego, CA USA	NIMH, NIDA	RCT	1, 4	To examine the effects of a foster parent training and support intervention (KEEP) on child behavior and parenting practices	G1: KEEp (Keeping foster and kinship parents trained and informed, based on MTFC) G2 Child Welfare SAU	Foster Parents G1: 359 G2: 341 Children G1: 359 G2: 341	Follow-up: 5 months post-baseline	Child in either a kin or nonrelative foster care placement for at least 30 days; child between 5 and 12 years;	“Medically fragile” child (severe physical or mental handicap) Minimal exclusions deliberate to map on to real-world child welfare conditions
Price, 2008 ³³	San Diego, CA USA	NIMH, NIDA	RCT	2, 4	To examine the effects of a foster parent training and support intervention (KEEP) on child placement changes	G1: KEEp G2: SAU	G1: 359 G2: 341	Follow-up: 5 months post-baseline	Child in either a kin or nonrelative foster care placement for at least 30 days; child between 5 and 12 years;	“Medically fragile” child (severe physical or mental handicap) Minimal exclusions deliberate to map on to real-world child welfare conditions

Table E-59. Keeping foster parents trained and supported, population characteristics

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age Mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
Chamberlain, 2008 ³²	G1: KEEp G2: SAU	G1: 8.88 (no sd) G2: 8.72 (no sd)	G1: 50% G2: 54%	% Caucasian G1: 20% G2: 25% % African American G1: 23% G2: 19% % Latino G1: 35% G2: 30%	% H/Latino G1: 35% G2: 30% multi-ethnic G1: 20% G2: 24%%	Foster parent: 34% kinship, 66% non-relative	G1: 49.86 (11.8) G2: 47.29 (11.7)	G1: 94% G2: 93%	% Caucasian G1: 21% G2: 34% % African American G1: 27% G2: 24% % Latino G1: 41% G2: 33%	% Hispanic/Latino G1: 41% G2: 33%% Multi-ethnic G1: 6% G2: 6%
Price, 2008 ³³	G1: KEEp G2: SAU	G1: 8.88 (no sd) G2: 8.72 (no sd)	G1: 50% G2: 54%	% Caucasian G1: 20% G2: 25% % African American G1: 23% G2: 19% % Latino G1: 35% G2: 30%	% H/Latino G1: 35% G2: 30% multi-ethnic G1: 20% G2: 24%%	Foster parent: 34% kinship, 66% non-relative	G1: 49.86 (11.8) G2: 47.29 (11.7)	G1: 94% G2: 93%	% Caucasian G1: 21% G2: 34% % African American G1: 27% G2: 24% % Latino G1: 41% G2: 33%	% Hispanic/Latino G1: 41% G2: 33%% Multi-ethnic G1: 6% G2: 6%

Table E-60. Keeping foster parents trained and supported, population clinical characteristics

First Author, Year	Comparison Groups	Maltreatment Type	Number of Exposures, Duration of Exposure, Number of CPS Referrals	Child Clinical Presentation, % With MH Symptoms or Behavior Problem, % Meeting a Diagnosis	Caregiver Presentation % With MH Symptoms, % Meeting a Diagnosis
Chamberlain, 2008 ³²	G1: KEEP G2: SAU	G1: Unspecified, CPS involvement (foster care) G2: Same	NR	NR	NR
Price, 2008 ³³	G1: KEEP G2: SAU	G1: Unspecified, CPS involvement (foster care) G2: Same	NR	NR	NR

Table E-61. Keeping foster parents trained and supported, intervention characteristics

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
Chamberlain, 2008 ³²	G1: KEEP G2: SAU	G1: 16 weeks (90 minute sessions, not clear how frequent) G2: Not specified	G1: foster parents G2: foster parents	G1: Trained paraprofessionals G2: CPS case workers	G1: Yes, report video review and monitor/feedback for consistency with manual during SV G2 No:	G1: Group (with make-up individual home-based sessions) G2: Not reported	G1: Community recreation centers or churches, some home visits G2: Not reported
Price, 2008 ³³	G1: KEEP G2: SAU	G1: 16 weeks (90 minute sessions, not clear how frequent) G2: Not specified	G1: foster parents G2: foster parents	G1: Trained paraprofessionals G2: CPS case workers	G1: Yes, report video review and monitor/feedback for consistency with manual during SV G2 No:	G1: Group (with make-up individual home-based sessions) G2: Not reported	G1: Community recreation centers or churches, some home visits G2: Not reported

Table E-62. Keeping foster parents trained and supported, mental health outcomes

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Chamberlain, 2008 Price, 2008 ^{32,33}	G1: KEEp G2: SAU	Child Behavior Problems (Parent Daily Report Checklist) Proportion positive reinforcement (aggregation of standardized questions and PDR questions about reinforcement and discipline)	Proportion Positive Reinforcement Baseline G1: 0.53 (0.27) G2: 0.52 (0.27) Termination G1: 0.60 (0.28) G2: 0.52 (0.28) not significant	Problem Behaviors (PDR) Baseline G1: 5.92 (4.26) G2: 5.77 (3.93) Termination G1: 4.37 (3.91) G2: 5.44 (4.15) Cohen's d=0.26 (didn't report a p value)	None	None

Table E-63. Keeping foster parents trained and supported, child welfare outcomes

First Author, Year	Comparison Groups	Safety	Placement Stability	Permanency
Price, 2008 ³³	G1: KEEp G2: SAU	NR	Positive Exit Rate G1: 17.4% G2: 9.1% p=.005 No significant interaction with # of prior placements Negative Exit Rate G1: 12.2% G2: 14.3% p=not significant Significant interaction with # of prior placements: $\Delta X^2 (1)=3.95, p=.047$	NR

Middle School Success

Table E-64. Middle School Success (MSS), study characteristics

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Kim, 2011 ³⁴ . Smith, 2011 ³⁵	Oregon, USA	NIMH, NIDA	RCT	1, 2, 4	To reduce levels of substance use and delinquent behaviors among girls in foster care during their last year in elementary school	G1: MSS G2: Usual Child Welfare services	Overall: 100 G1: 48 G2: 52	36 months	Girls in relative or nonrelative foster care in one of two counties containing major Pacific Northwest metropolitan areas and in their final year of elementary school	NR

Table E-65. MSS intervention, population characteristics

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
Kim, 2011, ³⁴ Smith, 2011 ³⁵	G1: MSS G2: Usual Child Welfare services	Overall: 11.54 (0.48); Range: NR G1: 11.48 (0.51) G2: 11.59 (0.45)	Overall: 100%	African-American Overall: 9% G1: 2.1% G2: 15.4% European American Overall: 63% G1: 64.6% G2: 61.5% American Indian/Alaska Native Overall: 4% G1: 6.3% G2: 1.9% Multiracial Overall: 14% G1: 14.6% G2: 13.5%	Latino Overall: 10% G1: 12.5% G2: 7.7%	Nonrelative or relative foster parents Nonrelative Overall: 68% G1: 68.8% G2: 63.5% Relative Overall: 32% G1: 31.3% G2: 36.5%	NR	NR	NR	NR

Table E-66. MSS intervention, population clinical characteristics

First Author, Year	Comparison Groups	Maltreatment Type	Number of Exposures, Duration of Exposure, Number of CPS Referrals	Child Clinical Presentation, % With MH Symptoms or Behavior Problem, % Meeting a Diagnosis	Caregiver Presentation % With MH Symptoms, % Meeting a Diagnosis
Kim, 2011; ³⁴ Smith, 2011 ³⁵	G1: MSS G2: Usual Child Welfare services	Physical abuse Overall: 56% G1: NR G2: NR Sexual abuse Overall: 67% G1: NR G2: NR Neglect Overall: 97% G1: NR G2: NR All three types Overall: 32% G1: NR G2: NR	NR	Achenbach System of Empirically Based Assessment (ASEBA) baseline psychosocial adjustment scores Internalizing behavior G1: 11.96 (8.19) G2: 11.56 (9.42) Externalizing behavior G1: 16.06 (11.05) G2: 14.38 (11.65)	NR

Table E-67. MSS intervention, intervention characteristics

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
Kim, 2011 ³⁴ , Smith, 2011 ³⁵	G1: MSS G2: Usual Child Welfare services	G1: 6 twice-weekly sessions for 3 weeks for foster parents, and 6 twice-weekly sessions for 3 weeks for girls G2: Varied	G1: Foster parents and children (not dyadic) G2: Foster parents and children	G1: Supervised facilitators and co-facilitators G2: Varied	G1: Yes G2: NR	G1: Individual and group G2: Varied	G1: NR G2: NR

Table E-68. MSS intervention, mental health outcomes

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Kim, 2011, ³⁴ Smith, 2011 ³⁵	G1: MSS G2: Usual Child Welfare services	Kim, 2011 Substance use self-report questionnaire, Self-Report Delinquency Scale (SRD) – general delinquency scale, ASEBA, PDR Smith, 2011 PDR	Kim, 2011 – mean (SD) Number of substance uses at 36 months Composite substance use Overall % of sample: NR G1: 1.42 (0.93) G2: 2.16 (1.93) t (88)=2.23, p=.03, d=.47 Bivariate correlation with txmt group=-.23, p<.05 Tobacco Overall % of sample: 23% G1: 1.49 (1.63) G2: 2.36 (2.49) t (88)=2.14, p=.04, d=.45 Bivariate correlation with txmt group=-.22, p<.05 Alcohol Overall % of sample: 33% G1: 1.49 (0.90) G2: 1.80 (1.46) t (88)=1.12, p=ns, d=.24 Bivariate correlation with txmt group=-.12, p=ns Marijuana Overall % of sample: 24% G1: 1.29 (0.82) G2: 2.33 (2.43) t (88)=2.69, p=.01, d=.57 Bivariate correlation with txmt group=-.28, p<.01	Kim, 2011 – mean (SD) Delinquent behavior in past 12 months at 36 months Composite delinquency Overall: NR G1: -0.17 (0.57) G2: 0.17 (1.06) t (88)=1.84, p=.07, d=.39 Bivariate correlation with txmt group=.19, p<.10 Frequency of delinquent behavior Overall: 0.62 (2.03), about 22 delinquent acts G1: 0.30 (0.92) G2: 0.95 (2.69) t (88)=1.67, p=.098, d=.36 Bivariate correlation with txmt group=-.18, p<.10 Association with delinquent peers Overall: NR G1: -0.17 (0.86) G2: 0.17 (1.02) t (88)=1.66, p=ns, d=.35 Bivariate correlation with txmt group=.17, p=ns	Kim, 2011 – mean (SD) Internalizing/externalizing symptoms at 6 and 12 months Overall: NR G1: 12.77 (8.53) G2: 12.50 (8.29) t (95)=-.10, p=ns, d=.02 Bivariate correlation with txmt group=.01, p=ns Prosocial behavior at 6 and 12 months Overall: NR G1: 0.80 (0.12) G2: 0.74 (0.14) t (97)=-2.25, p=.03, d=.46 Bivariate correlation with txmt group=.22, p<.05 Step 2 HRM result for txmt group β =.15, p=ns Smith, 2011 - mean (SD) Internalizing problems Baseline Overall: 1.51 (0.96) G1: NR G2: NR Bivariate correlation with txmt group=.12, p=ns 6 months Overall: 1.27 (0.90) G1: 1.09 (0.80) G2: 1.45 (0.96) Bivariate correlation with txmt group=-.20, p<.05 Step 2 HRM result for txmt group β =-.28, p<.01	Smith, 2011 - mean (SD) Externalizing problems Baseline Overall: 3.29 (2.31) G1: NR G2: NR Bivariate correlation with txmt group=.11, p=ns 6 months Overall: 2.66 (2.14) G1: 2.37 (2.11) G2: 2.94 (2.16) Bivariate correlation with txmt group=-.13, p=ns Step 2 HRM result for txmt group β =-.21, p<.01 Prosocial behavior Baseline Overall: 8.64 (1.31) G1: NR G2: NR Bivariate correlation with txmt group=.12, p=ns 6 months Overall: 8.76 (1.37) G1: NR G2: NR Bivariate correlation with txmt group=.18, p=ns Step 2 HRM result for txmt group β =.15, p=ns

Table E-69. MSS intervention, child welfare outcomes

First Author, Year	Comparison Groups	Safety	Placement Stability	Permanency
Kim, 2011 ³⁴ . Smith, 2011 ³⁵	G1: MSS G2: Usual Child Welfare services	NR	Kim, 2011 Placement changes at 12 months, mean (SD) Overall: 0.56 (1.14) G1: 0.33 (1.05) G2: 0.76 (1.19) t (97)=2.45, p=.02, d=.50 Correlation with txmt group=-.24, p<.05	NR

Multidimensional Treatment Foster Care—Preschoolers

Table E-70. Multidimensional treatment foster care—preschoolers, study characteristics

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Fisher, 2005; ³⁶ Fisher, 2007; ³⁷ Fisher & Kim, 2007; ³⁸ Fisher, 2008 ³⁹ Fisher, 2009; ⁴⁰ Fisher, 2011; ⁴¹ Bruce, 2009 ⁴²	Oregon, USA	NIMH, NIDA, ORMH	RCT	1, 2, 4	Evaluate efficacy of intervention for preschool children in foster care	G1: MTFC-P G2 RFC	Varies	12 or 24 months (see 1a)	3-6 y.o. foster children in placement of expected duration \geq 3 months Fisher, Van Ryzin, et al 2011	None specified

Table E-71. Multidimensional treatment foster care—preschoolers, population characteristics

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
Fisher, 2005; ³⁶ Fisher, 2007; ³⁷ Fisher & Kim, 2007; ³⁸ Fisher, 2008; ³⁹ Fisher, 2009; ⁴⁰ Fisher, 2011; ⁴¹ Bruce, 2009 ⁴²	G1: MTFC-P G2: RFC	G1: 4.54 (0.86) G2: 4.34 (0.83)	G1: 51% G2: 42%	Total Cauc: 89% AA: 1% Nat Am: 5% Per Fisher 2005 Cauc G1: 79% G2 92% Nat Am G1: 3% G2 4%	Lat: 5% Per Fisher 2005 G1: 18% G2: 4%	Foster parent	NR	NR	NR	NR

Table E-72. Multidimensional treatment foster care—preschoolers, population clinical characteristics

First Author, Year	Comparison Groups	Maltreatment Type	Number of Exposures, Duration of Exposure, Number of CPS Referrals	Child Clinical Presentation, % With MH symptoms or Behavior Problem, % Meeting a Diagnosis	Caregiver Presentation % With MH Symptoms, % Meeting a Diagnosis
Fisher, 2005; ³⁶ Fisher, 2007; ³⁷ Fisher & Kim, 2007; ³⁸ Fisher, 2008; ³⁹ Fisher, 2009; ⁴⁰ Fisher, 2011; ⁴¹ Bruce, 2009; ⁴²	G1: MTFC-P G2: RFC	Per Fisher 2005, not specified in other studies Sexual Abuse G1 17% G2 8% Physical G1 24% G2 4% Neglect G1: 55% G2 84% Emotional G1 4% G2 4%	NS	NS, young children in foster care (new, reentering, and transferring placement)	NS

Table E-73. Multidimensional treatment foster care—preschoolers, intervention characteristics

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
Fisher, 2005; ³⁶ Fisher, 2007; ³⁷ Fisher & Kim, 2007; ³⁸ Fisher, 2008; ³⁹ Fisher, 2009; ⁴⁰ Fisher, 2011; ⁴¹ Bruce, 2009 ⁴²	G1: MTFC-P G2: RFC	6-9 months	Foster care children, foster parent, permanent placement resource (birth parents, relative or nonrelative adoptive parents)	Team consisting of Foster parent consultant, child behavior specialist, bachelors or masters degree therapist, PhD supervisor, consulting psychiatrist, family therapist (if entering permanent placement)	Yes, progress notes and session checklists	Parent training (individual parent I person, phone, 24/7 crisis), preschool consultation, playgroup, family therapy for placement transition	Home, school

Table E-74. Multidimensional treatment foster care—preschoolers, mental health outcomes

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Fisher, 2005; ³⁶ Fisher, 2007; ³⁷ Fisher & Kim, 2007; ³⁸ Fisher, 2008; ³⁹ Fisher, 2009; ⁴⁰ Fisher, 2011; ⁴¹ Bruce, 2009 ⁴²	G1: MTFC-P G2: RFC	Cortisol level, Flanker task, EEG, Parent Daily Report	BRUCE 2009 Cognitive Control and Response Monitoring (Flanker Task) Errors of Commission, No difference between group G1 and G2, $F=0.47$, $p=NR$ (ns) Reaction Time, No difference between group G1 and G2, $F=0.68$, $p=ns$ (nr) EEG Event Related Potentials (ERP) in Response to Feedback G1 (+)>G2, Response Locked Components, $F=5.66$, $P<.01$ G1 (+)>G2, Feedback Locked Components, $F=5.82$, $P<.01$	FISHER 2007 Decrease AM-PM Change in Diurnal Salivary Cortisol G1 (-)>G2: $z=-2.061$, $p=.040$, (ES=-0.650) Decrease AM Cortisol level G1 (-)>G2: $z=-2.217$, $p=.027$, (ES=-0.66) Decrease PM Cortisol level G1 (-)>G2: $z=-2.339$, $p=.019$, (ES=-0.68)	FISHER & KIM 2007 Improved Trajectory (Increase) in Secure Attachment Behavior (Parent Attachment Diary) G1 (+)>G2, $z=2.29$, $p<.05$ Improved Trajectory (Decrease) in Avoidant Attachment Behavior (Parent Attachment Diary) G1 (-)>G2, $z=-2.34$, $p<.05$ Improved Trajectory (Decrease) in Resistant Attachment Behavior (Parent Attachment Diary) $z=.07$, $p=ns$ (nr)	FISHER & STOOLMILLER 2008 Decrease in Caregiver Stress Related to Child Problem Behaviors (Parent Daily Report) G1 (-)>G2, 1-2m: $t=2.628$, $p=.009$ No difference between group G1 and G2, 3-12m, $t=-0.34$, $p=.734$ Influence of Child Problem Behavior on Caregiver Stress 1-6m, $t=0.963$, $p=.336$ 6-12m, $t=2.593$, $p=.0096$ Caregiver stress x PM 1-2m: $t=-0.554$, $p=0.580$ 3-12m: $t=0.396$, $p=0.692$ FISHER, 2011 Preplacement Decrease AM-PM Change in Diurnal Salivary Cortisol G1 (-)=G2: $p=not$ significant, (ES=-0.650) Postplacement Decrease AM-PM Change in Diurnal Salivary Cortisol G1 (-)<G2: $p=significant$, Interaction term of intervention x time: $p<.05$ (ES=0.40)

Table E-75. Multidimensional treatment foster care—preschoolers, child welfare outcomes

First Author, Year	Comparison Groups	Safety	Placement Stability	Permanency
Fisher, 2005; ³⁶ Fisher, 2007; ³⁷ Fisher & Kim, 2007; ³⁸ Fisher, 2008; ³⁹ Fisher, 2009; ⁴⁰ Fisher, 2011; ⁴¹ Bruce, 2009 ⁴²	G1: MTFC-P G2: RFC	NR	NR	FISHER 2009 Type of permanent placement Reunification G1: 48% G2 68% Relative adoption G1 28% G2 20% Nonrelative adoption G1 24% G2 12% Survival analysis indicated less time and higher rate of permanent placement failure for RFC Fisher 2005 Failure of permanent placement G1: 10% G2: 36% Chi sq (1)=5.11, p=0.02 Interaction w mean # prior and concurrent placement, p=NR (NS)

New Orleans Intervention

Table E-76. New Orleans intervention, study characteristics

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Zeanah, 2001 ⁴³	Louisiana, USA	Office of Community Services of the State of Louisiana, the Sisters of Charity, the Harris Foundation, the Greater New Orleans Foundation, the Louisiana Children's Trust Fund, the Departments of Psychiatry of Tulane and L.S.U. Schools of Medicine, and in part by the "Early Experience and Brain Development" Research Network of the John D. and Catherine T. MacArthur Foundation	Non-concurrent cohort	2, 4	Evaluate a comprehensive multimodal, individualized enhanced foster care intervention to improve outcomes in young maltreated foster children.	G1: New Orleans intervention group: adjudicated children between 1995-1998 (post-intervention implementation) G2: Comparison group: adjudicated children between 1991-1994 (pre-intervention implementation) G3: Non-intervention group: adjudicated children between 1995-1998 who did not receive the intervention	G1: 95 G2: 145 G3: 25	1-4 years G1: records of children taken into care between 1/1/1991-12/31/1994 G2: records of children taken into care between 1/1/1995-12/31/1998 --4-year period for children entering care in 1991 and in 1995 -- 3-year period for children entering care in 1992 and 1996 --2-year period for children entering care in 1993 and 1997 --1-year period for children entering care in 1994 and 1998	Children younger than 48 months old when they came into foster care in a specific New Orleans area parish (county) between January 1, 1991, and December 31, 1998; Adjudicated as "in need of care" due to maltreatment.	None specified

Table E-77. New Orleans intervention, population characteristics

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age Mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
Zeanah, 2001 ⁴³	G1: New Orleans intervention group G2: Comparison group G3: Nonintervention group	In months G1: 21.8 (14.4) G2: 19.2 (13.3) G3: NR	G1: 53% G2: 48% G3: NR	African American G1: 58% G2: 57% G3: NR European American G1: 39% G2: 41% G3: NR Other G1: 3% G2: 2% G3: NR	NR	Foster and biological parents	NR	NR	NR	NR

Table E-78. New Orleans intervention, population clinical characteristics

First Author, Year	Comparison Groups	Maltreatment Type	Number of Exposures, Duration of Exposure, Number of CPS Referrals	Child Clinical Presentation, % With MH Symptoms or Behavior Problem, % Meeting a Diagnosis	Caregiver Presentation % With MH Symptoms, % Meeting a Diagnosis
Zeanah, 2001 ⁴³	G1: New Orleans intervention group G2: Comparison group G3: Nonintervention group	NR	NR	NR	NR

Table E-79. New Orleans intervention, intervention characteristics

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
Zeanah, 2001 ⁴³	G1: New Orleans intervention group G2: Comparison group G3: Nonintervention group	G1: See Larrieu & Zeanah, 1998 G2: NA G3: NA	G1: Child, all important caregivers and contexts G2: NA G3: NA	G1: Varies G2: NA G3: NA	G1: No G2: NA G3: NA	G1: Individual and dyadic G2: NA G3: NA	G1: Home, clinic G2: NA G3: NA

Table E-80. New Orleans intervention, child welfare outcomes

First Author, Year	Comparison Groups	Safety	Placement Stability	Permanency
Zeanah, 2001 ⁴³	G1: New Orleans intervention group G2: Comparison group G3: Nonintervention group	Rates of child recidivism (N/total, %) Validated as maltreated in subsequent incident G1: 4/95 (4.2%) G2: 19/145 (13.1%) G3: 4/25 (16.0%) Adjudicated in subsequent incident: G1: 3/95 (3.2%) G2: 14/145 (9.7%) G3: 3/25 (12.0%) Mantel-Haenzel Chi Square, p-value, and CI for G1 v G2 (computed by reviewers): Validated: X^2 [df=1, n=240]=5.217, p=0.022 Adjudicated: X^2 [df=1, n=240]=3.666, p=0.036 Relative risk reduction for G1 compared with G2: Validated: 67.9% [95% CI: 0.09 to 0.89] Adjudicated: 67.0% [95% CI: 0.11 to 0.90] Mantel-Haenzel Chi Square, p-value, and CI for G1 v G3 (computed by reviewers): Validated: X^2 [df=1, n=120]=4.384, p=0.036 Adjudicated: X^2 [df=1, n=120]=3.23, p=0.072 Relative risk reduction for G1 compared with G3: Validated: 73.8% [95% CI: 0.02 to 0.93] Adjudicated: 73.3% [95% CI: -0.23 to 0.94]	Length of time in foster care (mean # of months, SD): Overall G1: 20.5 (7.9), range of 8 to 45 months G2: 18.7 (14.6), range of 2 to 67 months G1 and G2, p=ns (NR) Within group analyses: length of time by type of outcome G1: F (3)=9.75, p<.001 G2: F (3)=6.27, p<.001 Means (SD) for length of time in care by outcome type: Reunification G1: 17.0 (6.7) G2: 15.8 (12.0) p=NR Termination G1: 23.2 (6.7) G2: 29.6 (13.7) p=NR Surrender G1: 27.5 (10.8) G2: 19.0 (14.1) p=NR Relative placement G1: 15.1 (5.7) G2: 16.6 (18.1) p=NR Post hoc Tukey test results: G1: Both surrender (M=27.5) and termination (M=23.2) were in care significantly longer than reunification (M=17.0) and placement with relatives (M=15.1) G2: Children whose parents' rights terminated were in care significantly longer (M=28.6) than both children placed with relatives (M=16.6) and reunified children (M=15.9)	Frequency of permanency outcome (%): Reunification G1: 34.7% G2: 49.0% Termination G1: 44.2% G2: 20.7% Surrender G1: 8.4% G2: 11.7% Relative placement G1: 12.6% G2: 18.6% Difference in permanency outcomes between group: Chi-sq (df=3)=16.13, p<.01 G1<G2: X^2 [df =3, n=240] =16.13, p<.01 G1 had twice as many terminations and significantly fewer reunifications as G2

Table E-80. New Orleans Intervention, child welfare outcomes (continued)

First Author, Year	Comparison Groups	Safety	Placement Stability	Permanency
Zeanah, 2001 ⁴³ (continued)	G1: New Orleans intervention group G2: Comparison group G3: Nonintervention group	<p>Rates of child recidivism only in cases of children returned to birth parents and placed with relatives (N/total, %)</p> <p>Validated: G1: 4/45 (8.9%) G2: 19/98 (19.4%) G3: NR</p> <p>Adjudicated:: G1: 3/45 (6.7%) G2: 14/98 (14.3%) G3: NR</p> <p>Mantel-Haenzel Chi Square, p-value, and CI for G1 v G2 (computed by reviewers): Validated: χ^2 [df=1, n=143]=2.501, p=0.114 Adjudicated: χ^2 [df=1, n=143]=1.697, p=0.193</p> <p>Relative risk reduction for G1 compared with G2: Validated: 54% [95% CI: -0.27 to 0.84] Adjudicated: 53.0%[95% CI: -0.54 to 0.86]</p> <p>Rates of child recidivism only in cases of children returned to birth parents (N/total, %):</p> <p>Validated: G1: 4/33 (8.9%) G2: 18/71 (25.4%) G3: NR</p> <p>Adjudicated: G1: 3/33 (6.7%) G2: 14/71 (19.7%) G3: NR</p> <p>Mantel-Haenzel Chi Square, p-value, and CI for G1 v G2 (computed by reviewers): Validated: χ^2 [df=1, n=104]=2.342, p=0.126 Adjudicated: χ^2 [df=1, n=104]=1.843, p=0.175</p>	NR	NR

Table E-80. New Orleans intervention, child welfare outcomes (continued)

First Author, Year	Comparison Groups	Safety	Placement Stability	Permanency
Zeanah, 2001 ⁴³ (continued)	G1: New Orleans intervention group G2: Comparison group G3: Nonintervention group	<p>Relative risk reduction for G1 compared with G2: Validated: 52.4% [95% CI: -0.30 to 0.82] Adjudicated: 53.8% [95% CI: -0.50 to 0.86]</p> <p>Rates of maternal recidivism (N/total, %): Validated: G1: 4/77 (5.2%) G2: 13/92 (14.1%) G3: 4/23 (17.4%) Adjudicated: G1: 3/77 (3.9%) G2: 10/92 (10.9%) G3: 3/23 (13.0%) Mantel-Haenzel Chi Square and p-value, G1 v G2 (computed by reviewers): Validated: X^2 [df=1, n=169]=3.677, p=0.055 Adjudicated: X^2 [df=1, n=169]=2.854, p=0.091 Relative risk reduction for G1 compared with G2: Validated: 63.10% [95% CI: -0.08 to 0.88] Adjudicated: 64.20% [95% CI: -0.26 to 0.90] Relative risk reduction for G1 compared with G3: Validated: 70.10% [95% CI: -0.10 to 0.92] Adjudicated: 70% [-0.38 to 0.94] Mantel-Haenzel Chi Square, p-value, and CI for G1 v G3 (computed by reviewers): Validated: X^2 [df =1, n=100]=3.544, p=0.060 Adjudicated: X^2 [df=1, n=100]=2.601, p=0.010 Relative risk reduction for G1 compared with G3: Validated: 70.1% [95% CI: -0.10 to 0.92] Adjudicated: 70% [95% CI: 0.38 to 0.94]</p>	NR	NR

Table E-80. New Orleans intervention, child welfare outcomes (continued)

First Author, Year	Comparison Groups	Safety	Placement Stability	Permanency
Zeanah, 2001 ⁴³ (continued)	G1: New Orleans intervention group G2: Comparison group G3: Nonintervention group	Rates of maternal recidivism only in cases of mothers whose parental rights were terminated (N/total, %): Validated: G1: 4/38 (10.5%) G2: 6/19 (31.6%) Adjudicated: G1: 3/38 (8.0%) G2: 6/19 (31.6%) Mantel-Haenzel Chi Square, p-value, and CI for G1 v G2 (computed by reviewers): Validated: χ^2 [df =1, n=57]=3.813, p=0.051 Adjudicated: χ^2 [df=1, n=57]=5.25, p=0.022 Relative risk reduction for G1 compared with G2: Validation: 66.8% [95% CI: -0.04 to 0.89 Adjudication: 74.7% [95% CI: 0.11 to 0.93]	NR	NR

Nurse Home Visiting

Table E-81. Nurse home visiting, study characteristics

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
MacMillan, 2005 ⁴⁴	Hamilton, Ontario, Canada	National Health Research Development Program, Health Canada; Dr. Scholl Foundation; Imperial Oil Foundation; Hamilton Social and Public Health Services Dept; Bell Canada Child Welfare Research Center; etc.	RCT	1, 2, 4	To examine whether nurse home visiting would reduce child abuse/neglect recidivism	G1: Nurse Home Visiting + SAU G2: Standard services	G1: 89 G2: 74	Post Intervention: none Follow-up: 1, 2, and 3 years	Index child younger than 13; reported episode of abuse or neglect within previous 3 months; index child still living with family to be returned within 30 days; speak English	Families where abuse committed by a foster parent; or when incident included sexual abuse

Table E-82. Nurse home visiting, population characteristics

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age Mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
MacMillan, 2005 ⁴⁴	G1: Nurse Home Visiting + SAU G2: Standard services	G1: 5.1 (3.9) G2: 5.2 (3.3)	G1: 58% G2: 39%	NR	NR	Biological parent (primarily, 93%)	G1: 29.5 (8.0) G2: 28.9 (6.7)	G1: 96% G2: 95%	NR	NR

Table E-83. Nurse home visiting, population clinical characteristics

First Author, Year	Comparison Groups	Maltreatment Type	Number of Exposures, Duration of Exposure, Number of CPS Referrals	Child Clinical Presentation, % with MH Symptoms or Behavior Problem, % Meeting a Diagnosis	Caregiver Presentation % With MH Symptoms, % Meeting A Diagnosis
MacMillan, 2005 ⁴⁴	G1: Nurse Home Visiting G2: Standard services	G1: Physical abuse &/or neglect G2: Physical abuse &/or neglect	NR	NR	NR

Table E-84. Nurse home visiting, intervention characteristics

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
MacMillan, 2005 ⁴⁴	G1: Nurse Home Visiting G2: Standard services	G1: 2 years; 90 1.5 hour visits (weekly for 6 months, biweekly for 6 months, monthly for 12 months) G2: NR	G1: parents G2: parents	G1: Public health nurses G2: CPS caseworkers	G1: No (supervision and attendance only) G2: No	G1: individual G2: individual	G1: home G2: Not specified (standard CPS services)

Table E-85. Nurse home visiting, mental health outcomes

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
MacMillan, 2005 ⁴⁴	G1: Nurse Home Visiting G2: Standard services	RBPC (Revised behavior problem checklist): Child behavior Attention problems (0-32) Anxiety (0-22) Psychotic behavior (0-12) Conduct disorder (0-44) Socialized aggression (0-34) Excessive motor tension (0-10)	[Attention Problems: RBPC (0-32)] Baseline score mean (SD) G1 boys: 12.2 (5.7) G2 boys: 12.8 (8.2) G1 girls: 8.8 (6.8) G2 girls: 10.4 (5.8) 1-year f/u score mean (SD) G1 boys: 9.3 (6.6) G2 boys: 8.1 (7.2) G1 girls: 6.3 (6.1) G2 girls: 10.2 (6.2) 2-year f/u score mean (SD) G1 boys: 10.1 (6.9) G2 boys: 10.4 (8.0) G1 girls: 7.7 (6.4) G2 girls: 9.5 (7.9) 3-year f/u score mean (SD) G1 boys: 8.6 (7.3) G2 boys: 9.2 (7.0) G1 girls: 8.4 (7.7) G2 girls: 7.7 (5.9) None significant No change score reported	[Anxiety-Withdrawal RBPC (0-22)] Baseline score mean (SD) G1 boys: 6.4 (4.9) G2 boys: 7.1 (4.7) G1 girls: 4.7 (3.6) G2 girls: 6.5 (4.3) 1-year f/u score mean (SD) G1 boys: 5.4 (5.5) G2 boys: 3.7 (4.2) G1 girls: 3.3 (3.7) G2 girls: 5.5 (5.0) 2-year f/u score mean (SD) G1 boys: 5.2 (4.4) G2 boys: 4.9 (4.5) G1 girls: 4.5 (4.1) G2 girls: 4.4 (4.6) 3 year f/u score G1 boys: 3.9 (4.2) G2 boys: 4.8 (5.0) G1 girls: 5.0 (4.2) G2 girls: 4.4 (3.6) None significant No change score reported	Psychotic behavior: RBPC (0-12) Baseline score mean (SD) G1 boys: 3.5 (2.5) G2 boys: 2.9 (2.7) G1 girls: 2.4 (2.6) G2 girls: 2.9 (2.8) 1-year f/u score mean (SD) G1 boys: 2.0 (2.2) G2 boys: 2.0 (1.9) G1 girls: 1.2 (1.6) G2 girls: 2.3 (2.7) 2-year f/u score mean (SD) G1 boys: 2.6 (2.7) G2 boys: 2.5 (3.0) G1 girls: 1.5 (1.8) G2 girls: 2.2 (2.4) 3-year f/u score mean (SD) G1 boys: 1.5 (1.8) G2 boys: 1.8 (2.2) G1 girls: 1.8 (2.2) G2 girls: 1.5 (1.6) None significant No change score reported	Conduct Disorder (RBPC 0-44) Baseline score mean (SD) G1 boys: 24.9 (10.7) G2 boys: 21.4 (12.0) G1 girls: 16.3 (11.6) G2 girls: 19.5 (8.1) 1-year f/u score mean (SD) G1 boys: 17.7 (9.8) G2 boys: 15.0 (10.9) G1 girls: 13.5 (10.7) G2 girls: 15.2 (8.1) 2-year f/u score mean (SD) G1 boys: 19.0 (8.8) G2 boys: 17.0 (11.3) G1 girls: 15.4 (11.9) G2 girls: 13.8 (9.5) 3-year f/u score mean (SD) G1 boys: 13.8 (9.3) G2 boys: 14.7 (10.6) G1 girls: 11.7 (10.3) G2 girls: 12.0 (7.9) None significant No change score reported

Table E-85. Nurse home visiting, mental health outcomes (continued)

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
MacMillan, 2005 ⁴⁴ (continued)	G1: Nurse Home Visiting G2: Standard services		Socialized Aggression (RPBC 0-34) Baseline score mean (SD) G1 boys: 5.5 (6.2) G2 boys: 3.6 (3.3) G1 girls: 2.4 (2.8) G2 girls: 3.5 (4.8) 1-year f/u score mean (SD) G1 boys: 3.4 (4.4) G2 boys: 2.5 (3.5) G1 girls: 2.1 (2.9) G2 girls: 1.8 (1.9) 2-year f/u score mean (SD) G1 boys: 3.6 (4.5) G2 boys: 4.0 (6.2) G1 girls: 3.0 (6.0) G2 girls: 2.0 (2.9) 3-year f/u score mean (SD) G1 boys: 3.5 (6.1) G2 boys: 3.1 (5.6) G1 girls: 3.8 (7.4) G2 girls: 1.4 (2.1) None significant No change score reported	Excessive Motor Tension (RPBC 0-10) Baseline score mean (SD) G1 boys: 4.6 (2.6) G2 boys: 4.2 (2.9) G1 girls: 3.2 (2.7) G2 girls: 4.3 (2.4) 1-year f/u score mean (SD) G1 boys: 3.2 (2.3) G2 boys: 2.8 (2.4) G1 girls: 2.5 (2.0) G2 girls: 3.7 (2.5) 2-year f/u score mean (SD) G1 boys: 3.5 (2.2) G2 boys: 3.5 (3.0) G1 girls: 2.8 (2.7) G2 girls: 2.9 (2.4) 3-year f/u score mean (SD) G1 boys: 2.7 (2.3) G2 boys: 3.5 (2.7) G1 girls: 2.9 (2.5) G2 girls: 2.0 (2.5) None significant No change score reported	None	None

Table E-86. Nurse home visiting, healthy caregiver child relationship outcomes

First Author, Year	Comparison Groups	Measures	Caregiver-child Relationship	Caregiver-Child Relationship (Part 2)	Caregiver-Child Relationship (Part 3)	Caregiver-Child Relationship (Part 4)
MacMillan, 2005 ⁴⁴	G1: Nurse Home Visiting G2: Standard services	Abusive Parenting: CAPI Child-rearing attitudes: AAPI Home environ: HOME Family function: General functioning scale of family assessment device Supportive social relationships: Social provisions scale	CAPI Baseline score mean (SD) G1: 195.1 (109.6) G2: 202.6 (111.1) 1-year f/u score mean (SD) G1: 166.1 (115.9) G2: 165.6 (109.9) 2-year f/u score mean (SD) G1: 156.5 (114.7) G2: 168.2 (112.6) 3-year f/u score mean (SD) G1: 149.3 (118.2) G2: 149.2 (116.3) none significant Change scores not reported	AAPI Baseline score mean (SD) G1: 122.3 (17.6) G2: 123.1 (14.7) 1-year f/u score mean (SD) G1: 127.0 (16.3) G2: 129.1 (13.3) 2-year f/u score mean (SD) G1: 129.5 (16.3) G2: 130.6 (15.2) 3-year f/u score mean (SD) G1: 133.1 (18.3) G2: 132.4 (16.3) none significant Change score not reported	HOME Baseline score mean (SD) G1: 68.9 (16.5) G2: 71.5 (12.3) 1-year f/u score mean (SD) G1: 70.2 (11.8) G2: 71.1 (11.6) 2-year f/u score mean (SD) G1: 71.8 (13.2) G2: 70.2 (11.8) 3-year f/u score mean (SD) G1: 76.2 (13.6) G2: 73.6 (14.37) none significant Change score not reported	Family Function Score Baseline score mean (SD) G1: 2.12 (0.45) G2: 2.12 (0.44) 1-year f/u score mean (SD) G1: 2.05 (0.46) G2: 1.95 (0.35) 2-year f/u score mean (SD) G1: 1.97 (0.44) G2: 1.93 (0.45) 3-year f/u score mean (SD) G1: 2.01 (0.46) G2: 1.90 (0.36) none significant Change score not reported

Table E-87. Nurse home visiting, child welfare outcomes

First Author, Year	Comparison Groups	Safety	Placement Stability	Permanency
MacMillan, 2005 ⁴⁴	G1: Nurse Home Visiting G2: Standard services	<p>Based on CPS records</p> <p>Incidence of physical abuse/neglect (dichotomized as no incidents vs. any incidents)</p> <p>Neglect: G1: 46.6% G2: 51.4% <i>no significant difference</i></p> <p>Physical abuse G1: 33.0% G2: 43.1% <i>no significant difference</i></p> <p>Days to first incidence of abuse or neglect No significant difference in survival curves</p> <p>Severity of physical abuse G1: 1.7 (0.6) G2: 1.6 (0.6) <i>No significant difference</i></p> <p><u>Based on hospital records</u> Recurrence of physical abuse or neglect G1: 23.6% G2: 10.8% (diff 12.8% [95% CI 1.5-24.1])</p>	NR	NR

Parent-Child Interaction Therapy Adaptation

Table E-88. Parent-child interaction therapy adaptation, study characteristics

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Chaffin, 2004 ⁴⁵	Oklahoma, United States	U.S. Department of Health and Human Services; The Administration on Children, Youth and Families; Children's Bureau; Office on Child Abuse and Neglect	Randomized Controlled Trial	2, 4	To test the efficacy and sufficiency of parent-child interaction therapy (PCIT) in preventing re-reports of physical abuse among abusive parents.	G1: Parent-Child Interaction Therapy Adaptation Package- includes a Motivational Intervention (MI) orientation (PCIT-AP) G2: PCIT-Ap+ enhanced individualized services (PCIT-ApEnhanced) G3: Standard community-based parenting group (Usual Care)	G1: 42 G2: 33 G3: 35	Post Intervention: 6 months Follow-up:	Abusive parent (including stepparents or others in a parental role) and at least one abused child available to participate and no legal termination of parental rights or abdication of parenting role had been initiated; abusive parent had a minimum measured IQ score of 70; child was between 4 and 12 years old; abusive parent did not have a child welfare report as a sexual abuse perpetrator; the parent provided voluntary informed consent to participate	Participant could not comprehend assessment questions prior to randomization

Table E-88. Parent-child interaction therapy adaptation, study characteristics (continued)

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Chaffin, 2009 ⁴⁶		U.S. Centers for Disease Control and Prevention	Randomized Controlled Trial	5	To field test the effectiveness of a motivational intervention compared with a standard orientation in improving retention in PCIT adapted for maltreating parents and a standard didactic parent training program (usual care)	G1:PCIT-AP G2: Usual Care + MI G3: PCIT + standard orientation G4: Usual Care	G1: 34 G2: 41 G3: 36 G4: 42	Post Intervention: 18 to 20 weeks Follow-up: NA	Referral to the program by child welfare for neglect and/or physical abuse, an available index child between 2.5 and 12 years old; Parent IQ > 65	Change in eligibility status due to termination of parental rights or other loss of access to all children.
Chaffin, 2011 ⁴⁷		U.S. Centers for Disease Control and Prevention	Randomized Controlled Trial	2, 4	Test effectiveness in a field agency of PCIT-AP; dismantle the MI component versus the standard pre-services orientation program	G1:PCIT-AP G2: Usual Care + MI G3: PCIT + standard orientation G4: Usual Care	G1: 34 G2: 41 G3: 36 G4: 42	Post Intervention: 18 to 20 weeks Follow-up: NA	Referral to the program by child welfare for neglect and/or physical abuse, an available index child between 2.5 and 12 years old; Parent IQ > 65	Change in eligibility status due to termination of parental rights or other loss of access to all children.

Table E-89. Parent-child interaction therapy adaptation, population characteristics

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age Mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
Chaffin, 2004 ⁴⁵	G1: PCIT-AP G2: PCIT-APEnhanced G3: Usual Care	Not reported Inclusion range: 4-12	Not reported	% Caucasian G1: G2: % African American G1: G2: % other race (specify) G1: G2:	% Hispanic/Latino G1: G2: % NOT Hispanic/Latino G1: G2: % other ethnicity (specify) G1: G2:	Abusive parent (including stepparents or others in a parental role)	Aggregate: 32 (8.8)	Aggregate: 65%	% Caucasian Aggregate: 52% % African American Aggregate: 40% % other race (specify) Hispanic/Latino Aggregate: 4% Native American Aggregate: 1% Asian Aggregate: 1% Other, unspecified Aggregate: 1%	% Hispanic/Latino Aggregate: 4% % NOT Hispanic/Latino G1: G2: % other ethnicity (specify) G1: G2:
Chaffin, 2009 ⁴⁶	G1: PCIT-AP G2: Usual Care + MI G3: PCIT + standard orientation G4: Usual Care	NR	NR	NR	NR	Parents	NR	Aggregate: 75%	% Caucasian Aggregate: 60% % African American Aggregate: 19% % Native American Aggregate: 9% % Asian or another race/ethnicity Aggregate: 6%	% Hispanic/Latino Aggregate: 19% % NOT Hispanic/Latino Aggregate: 81% % Asian or another race/ethnicity Aggregate: 6%

Table E-89. Parent-child interaction therapy adaptation, population characteristics (continued)

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age Mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
Chaffin, 2011 ⁴⁷	G1: PCIT-AP G2: Usual Care + MI G3: PCIT + standard orientation G4: Usual Care	NR	NR	NR	NR	Biological parents, stepparents, or primary caregivers	25 (6.5)	Aggregate: 75	% Caucasian Aggregate: 60% % African American Aggregate: 19% % Native American Aggregate: 9% % Other, not specified Aggregate: 6%	% Hispanic/Latino Aggregate: 7% % NOT Hispanic/Latino Aggregate: 93%

Table E-90. Parent-child interaction therapy adaptation, population clinical characteristics

First Author, Year	Comparison Groups	Maltreatment Type	Number of Exposures, Duration of Exposure, Number of CPS Referrals	Child Clinical Presentation, % With MH Symptoms or Behavior Problem, % Meeting a Diagnosis	Caregiver Presentation % With MH Symptoms, % Meeting a Diagnosis
Chaffin, 2004 ⁴⁵	G1: PCIT-AP G2: PCIT-AP Enhanced G3: Usual Care	G1: Physical G2: Physical G3: Physical Among all participants, 25% had CPS records indicating neglect	Number of exposures Not reported Duration of exposure Not reported Number of CPS referrals for abuse Aggregate: 2 (sd not reported) Number of CPS referrals for neglect Aggregate: 2 (sd not reported)	NR	% with MH symptoms/substance abuse (alcohol or drug) 32% % meeting a dx for a drug disorder 20% % meeting a dx for an alcohol disorder 16% % with MH symptoms/substance abuse (antisocial personality disorder) 32% % with MH symptoms/substance abuse (moderate to high level of depression) 22%
Chaffin, 2009 ⁴⁶	G1: PCIT-AP G2: Usual Care + MI G3: PCIT + standard orientation G4: Usual Care	Reasons for Past Referrals (% of referrals) 70% neglect; 23% physical abuse; 6% sexual abuse	Previous referral Aggregate: Mean=6, Median=4	NR	NR
Chaffin, 2011 ⁴⁷	G1: PCIT-AP G2: Usual Care + MI G3: PCIT + standard orientation G4: Usual Care	Reasons for Past Referrals (% of referrals) 70% neglect; 23% physical abuse; 6% sexual abuse	Previous referral Aggregate: Mean=6, Median=4	NR	NR

Table E-91. Parent-child interaction therapy adaptation, intervention characteristics

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
Chaffin, 2004 ⁴⁵	G1: PCIT-AP G2: PCIT-ApEnhanced G3: Usual Care	G1: Motivational Intervention (MI) orientation (pre-PCIT intervention): 6 sessions; PCIT: Child-Directed (CDI) and then Parent-Directed (PDI) components: 12-14 sessions; pre-and post-PCIT skill-building group for the sessions. M= 1.9 (Median=0 NOTE: Standard PCIT allows the no. of sessions to vary depending on attaining prescribed mastery criteria in the CDI and then PDI components. G2: 6 months (18-20 sessions) additional individualized treatment as requested and home visits to reinforce parenting skills learned in sessions M= 11.2 (Median=4) G3: 18 Sessions additional individualized treatment as requested M= 1.9 (Median=0)	G1: MI component directed at parent group; PCIT component directed at parent-child dyad G2: Parent-child dyad and individualized services directed at parent G3: Physically abusive parent	G1: Therapists- basic trainees (graduate practicum students, interns, beginning postdoctoral fellows), experienced trainees (specific degree level not reported) G2: Therapists- basic trainees (graduate practicum students, interns, beginning postdoctoral fellows), experienced trainees (specific degree level not reported) G3: Not reported	G1: Yes G2: Yes G3: No	G1: Individual G2: Individual G3: Group	G1: Clinic G2: Clinic G3: Community-based center

Table E-91. Parent-child interaction therapy adaptation, intervention characteristics (continued)

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
Chaffin, 2009 ⁴⁶	G1: PCIT-AP G2: Usual Care + MI G3: PCIT + standard orientation G4: Usual Care	G1: 6 orientation sessions and 12-14 PCIT sessions G2: 6 orientation sessions and 12 parenting group sessions G3: 6 orientation sessions and 12-14 PCIT sessions G4: 6 orientation sessions and 12 parenting group sessions	G1: Parent and child G2: Parent G3: Parent and child G4: Parent	G1: Master's level agency therapists G2: Master's level agency therapists G3: Master's level agency therapists G4: Master's level agency therapists	G1: Yes G2: Yes for orientation, No for didactic parenting sessions G3: No for orientation; Yes for PCIT G4:	G1: Individual G2: Group G3: Individual G4: Group	G1: Child welfare parenting center G2: Child welfare parenting center G3: Child welfare parenting center G4: Child welfare parenting center
Chaffin, 2011 ⁴⁷	G1: PCIT-AP G2: Usual Care + MI G3: PCIT + standard orientation G4: Usual Care	G1: 6 orientation sessions and 12-14 PCIT sessions G2: 6 orientation sessions and 12 parenting group sessions G3: 6 orientation sessions and 12-14 PCIT sessions G4: 6 orientation sessions and 12 parenting group sessions	G1: Parent and child G2: Parent G3: Parent and child G4: Parent	G1: Master's level agency therapists G2: Master's level agency therapists G3: Master's level agency therapists G4: Master's level agency therapists	G1: Yes G2: Yes for orientation, No for didactic parenting sessions G3: No for orientation; Yes for PCIT G4:	G1: Individual G2: Group G3: Individual G4: Group	G1: Child welfare parenting center G2: Child welfare parenting center G3: Child welfare parenting center G4: Child welfare parenting center

Table E-92. Parent-child interaction therapy adaptation, mental health outcomes

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Chaffin, 2004 ⁴⁵	G1: PCIT-AP G2: PCIT-ApEnhanced G3: Usual Care	Beck Depression Inventory (BDI)	Behavior Assessment System for Children-Parent-Report Externalizing T score Baseline score mean (SD) G1: 60.6 (2.7) G2: 69.4 (3.0) G3: 59.7 (4.0) Endpoint score mean (SD) G1: 55.3 (2.2) G2: 59.5 (2.4) G3: 56.4 (4.0) Change score mean (SD) Aggregate change, $p < .05$ Change Score Mean (SD) G1: Not Reported G2: Not Reported G3: Not Reported Time by group effect, $p = NS$	Behavior Assessment System for Children-Parent-Report Internalizing T score Baseline score mean (SD) G1: 25 (3.0) G2: 24 (3.4) G3: 25 (3.3) Endpoint score mean (SD) G1: 14 (2.9) G2: 15 (3.0) G3: 32 (4.8) Change score mean (SD) Aggregate change, $p < .05$ Change Score Mean (SD) G1: Not Reported G2: Not Reported G3: Not Reported Time by group effect, $p = NS$	None	None

Table E-93. Parent-child interaction therapy adaptation, healthy caregiver child relationship outcomes

First Author, Year	Comparison Groups	Measures	Caregiver-Child Relationship	Caregiver-Child Relationship (Part 2)	Caregiver-Child Relationship (Part 3)	Caregiver-Child Relationship (Part 4)
Chaffin, 2004 ⁴⁵	G1: PCIT-AP G2: PCIT-ApEnhanced G3: Usual Care	Child Abuse Potential Inventory (CAP)- Abuse, Parent Distress, Rigidity, Loneliness, and Problems with Child scales;	Child Abuse Potential Inventory Abuse subscale Baseline score mean (SD) G1: 60.6 (2.7) G2: 69.4 (3.0) G3: 59.7 (29) Endpoint score mean (SD) G1: 55.3 (2.2) G2: 59.5 (2.4) G3 56.4 (4.0) Child Abuse Potential Inventory Parent Distress subscale Baseline score mean (SD) G1: 108 (11.1) G2: 87 (12.5) G3: 95 (12.1) Endpoint score mean (SD) G1: 68 (14.2) G2: 67 (15.4) G3 56 (22.0) Change score mean (SD) Aggregate: scores decreased, but statistic NR Between group, p=NS	Child Abuse Potential Inventory Rigidity subscale Baseline score mean (SD) G1: 22 (2.4) G2: 19 (2.7) G3: 25 (2.6) Endpoint score mean (SD) G1: 18 (2.7) G2: 17 (3.4) G3 26 (3.6) Change score mean (SD) NR Between group, NR Child Abuse Potential Inventory Problems with Child subscale Baseline score mean (SD) G1: 7.4 (1.1) G2: 7.9 (1.2) G3: 7.1 (1.2) Endpoint score mean (SD) G1: 5.1 (1.8) G2: 7.8 (1.2) G3 10.0 (2.2) Change score mean (SD) Aggregate change, p< .05 Between group, NR	BDI Baseline score mean (SD) Aggregate: 28 (sd not reported) Endpoint score mean (SD) Aggregate: 12 (sd not reported) Change score mean (SD) p=Significant, but statistic not reported Between group, t (12)=2.25, p< .05 (reduction in PCIT-ApEnhanced group (G1) was less than the other groups) Change Score Mean (SD) G1: Not Reported G2: Not Reported G3: Not Reported	Dyadic Parent-Child Interaction Coding System-II Positive Parent Behaviors Baseline score mean (SD) G1: 140 (10.9) G2: 127 (10.7) G3: 113 (11.0) Endpoint score mean (SD) G1: 152 (11.2) G2: 146 (18.3) G3 107 (18.0) Change NS, statistic NR Between group, NR Dyadic Parent-Child Interaction Coding System-II Negative Parent Behaviors Baseline score mean (SD) G1: 25 (3.0) G2: 24 (3.4) G3: 25 (3.3) Endpoint score mean (SD) G1: 14 (2.9) G2: 15 (3.0) G3 32 (4.8) Change G1: t (12)=-3.83, p< .01 G2: t (17)=-3.62, P< .01 G3: Change NS, statistic NR

Table E-94. Parent-child interaction therapy adaptation, child welfare outcomes

First Author, Year	Comparison Groups	Safety	Placement Stability	Permanency
Chaffin, 2004 ⁴⁵	G1: PCIT-AP G2: PCIT-APEnhanced G3: Usual Care	Physical Abuse Re-reports (statewide child welfare administrative database) G1: 8 (19%) G2: 12 (36%) G3: 17 (49%) X ² (2,N=110) =7.6 p=.02 Pairwise comparisons: G1 vs G3: log rank=6.2, p<.02 G1 had better survival- longer time without re-reports G1 vs G2: log rank=2.3, p=1.3 NS- no difference	NR	NR
Chaffin, 2011 ⁴⁷	G1:PCIT-AP G2: Usual Care + MI G3: PCIT + standard orientation G4: Usual Care	Raw (biased) Recidivism Rates (child welfare system database) Raw percentages G1: 29% G2: 34% G3: 47% G4: 41%	Recidivism (corrected for risk deprivation) Survival analysis Pairwise comparisons G1 vs G3: Hazard Ratio (HR)=0.11, p<.05 (G1 went longer without recidivism) G1 vs G2: HR=0.10, p<.05 G1 vs G4: HR=.20, NS	NR

Table E-95. Parent-child interaction therapy adaptation, treatment retention

First Author, Year	Comparison Groups	Treatment Retention
Chaffin, 2009 ⁴⁶	G1:PCIT-AP G2: Usual Care + MI G3: PCIT + standard orientation G4: Usual Care	Cumulative Survival in treatment G1: 85% (estimated survival time=11.4, 95% CI=10.8 to 12.0) G2: 56% (estimated survival time=9.1, 95% CI=7.8 to 10.4) G3: 65% (estimated survival time=9.2, 95% CI=7.8 to 10.6) G4: 64%, (estimated survival time=9.1, 95% CI=7.7 to 10.4) Wilcoxon=8.3, df=3, p< .05 Pairwise comparisons: G1 vs G2: Wilcoxon=8.0, df=1, p<.01 G1 vs G3: Wilcoxon=5.1, df=1, p<.05 G1 vs G4: Wilcoxon=5.6, df=1, p<.05 All other pairwise comparisons NS, statistics NR.

SafeCare

Table E-96. SafeCare, study characteristics

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Chaffin, 2012 ⁴⁸	OK, USA	National Institute for Mental Health	RCT	2, 4	To compare CPS recidivism outcomes for maltreating or neglecting parents receiving SafeCare or SAU and also coached vs. uncoached quality control strategies in a scaled up field implementation	G1: SC-C G2: SC-U G3: SAU-C G4: SAU-U	N=2175 G1: 25% (544) G2: 28% (609) G1: 24% (522) G2: 23% (500)	CPS report follow-up: mean=6 years	Parents and caregivers reported to CPS (excluding sexual abuse reports) and enrolled in statewide system of home based services operated by community agencies under contract with CPS.	NR

Table E-97. SafeCare, population characteristics

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
Chaffin, 2012 ⁴⁸	G1: SafeCare with supervisory coaching G2: Safecare uncoached G3: Services as Usual, Coached G4: Service as Usual Uncoached	NR	NR	NR	NR	Parents or caregivers	29.4 (NR)	91%	AA: 9% AI: 16% C: 72% Unknown" 3%	Hispanic 5% Non-Hispanic 92% Unknown: 3%

Table E-98. SafeCare, population clinical characteristics

First Author, Year	Comparison Groups	Maltreatment Type	Number of Exposures, Duration of Exposure, Number of CPS Referrals	Child Clinical Presentation, % With MH Symptoms or Behavior Problem, % Meeting a Diagnosis	Caregiver Presentation % With MH Symptoms, % Meeting a Diagnosis
Chaffin, 2012 ⁴⁸	G1: SafeCare with supervisory coaching G2: Safecare uncoached G3: Services as Usual, Coached G4: Service as Usual Uncoached	Neglect only: 76% Physical abuse only: 9% Sexual abuse only: <1% Mixed type: 14%	Total unduplicated past and future reports: 13, 144 Mean prior CPS reports: 4.73	NR	Mean Beck Depression Inventory (BDI): 12.9 Mean with significant depression (BDI > 19): 27% Mean with drug or alcohol disorder: 29% Mean Family Resource Scale basic needs score: 4.4 Mean Family Resource Scale total score: 3.8 Mean Child Abuse Potential Inventory (CAPI): 161

Table E-99. SafeCare, intervention characteristics

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
Chaffin, 2012 ⁴⁸	G1: SafeCare with supervisory coaching G2: Safecare uncoached G3: Services as Usual, Coached G4: Service as Usual Uncoached	G1, G2: At least one weekly visit over 6 months G3, G4: At least one monthly visit over 6 months	G1-G4: Parent/caregiver	Trained paraprofessional home visitors	G1, G2: Yes G3, G4: No	G1-G4: Individual with parent or caregiver	G1-G4: Home-based

Table E-100. SafeCare, child welfare outcomes

First Author, Year	Comparison Groups	Safety	Placement Stability	Permanency
Chaffin, 2012 ⁴⁸	G1: SafeCare with supervisory coaching G2: Safecare uncoached G3: Services as Usual, Coached G4: Service as Usual Uncoached	<p>CPS recidivism rates</p> <p>Full 2-level propensity stratified recurrent event frailty models: 4-strata solution:</p> <p>Main effect of SC (SE)=-.186 (.087), p= .03, HR (95% CI)=.83 (.70 to .98)</p> <p>Main effect of coaching (SE)=-.160 (.077), p= .04, HR (95% CI)=.85 (.73 to .99)</p> <p>Across CEM strata</p> <p>Main effect of SC (SE)=-.181 (.056), p= .001, HR (95% CI)=.83 (.75 to .93)</p> <p>Customary SC (preschool age, no untreated drug or alcohol disorder) 4-strata solution:</p> <p>Main effect of SC (SE)=-.301 (.125), p= .016, HR (95% CI)=.74 (.58 to .95)</p> <p>Main effect of coaching (SE)=NS</p> <p>Across CEM strata</p> <p>Main effect of SC (SE)=-.241 (.086), p< .05, HR (95% CI)=.79 (.66 to .93)</p> <p>Compliance main effect (SE)=-.308 (.125), p= .014, HR (95% CI)=.73 (.57 to .94)</p> <p>No significant differences in compliance between SC and SAU.</p>	NR	NR

Trauma-Focused Cognitive Behavioral Therapy

Table E-101. Trauma-focused cognitive behavioral therapy, study characteristics

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Cohen, 1996 ⁴⁹	NR	National Center on Child Abuse and Neglect	RCT	1, 4	To evaluate the relative efficacy of the CBT model compared to a non-specific alternative treatment, nondirective support therapy (NST) in sexually abused preschool age children.	G1: Cognitive-behavioral therapy for sexually abused pre-school children (CBT-SAP) G2: Nondirective supportive therapy (NST)	G1: NR G1: NR Total n= 86	Post Intervention n: 12 sessions over 12-16 wks Follow-up: NR	experienced sexual abuse with most recent episode no earlier than 6 months before referral to the study; validated abuse; minimal level of symptomology (WBR total score of more than 7 or any inappropriate sexual behavior on CSBI)	mental retardation; pervasive developmental disorder; psychotic symptoms; serious medical illness; psychotic disorder; active substance abuse in parent participating in treatment; same caretaker for more than 12 months who would participate in the study
Cohen, 2004 ⁵⁰	NR	National Institutes of Mental Health	RCT	1, 3, 4	To examine the differential efficacy of TF-CBT and CCT for treating PTSD in sexually abused children.	G1: Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) G2: Child Centered Therapy for Treating PTSD	G1: 114 G2: 115	Post Intervention n: Follow-up:	meet at least five criteria for DSM-IV defined PTSD, including at least one symptom in each of the three PTSD clusters; children had to have a parent or primary care taker who would participate in the program	non English speaking; documented developmental disorder; children on psychotropic medications had to have been on a medication regimen for at least two months; receiving psychotherapy for sexual abuse outside of the study; active psychotic disorder or active substance abuse disorder; parent or primary care taker had such a disorder

Table E-101. Trauma-focused cognitive behavioral therapy, study characteristics (continued)

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Deblinger, 2001 ⁵¹	NR	National Institute of Mental Health	RCT	1	To examine the differential effectiveness of CBT and supportive group psychotherapies for young children who experienced sexual abuse.	G1: Supportive Therapy G2: Cognitive Behavioral Therapy	G1: 44 maternal care givers and children G2: 44 maternal caregivers and children	Post Intervention: 11 weeks Follow-up: 3 months	referral by DYFS, outpatient center	credible disclosure of contact sexual abuse to a professional, ages 2-8

Table E-102. Trauma-focused cognitive behavioral therapy, population characteristics

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age Mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
Cohen, 1996 ⁴⁹	G1: Cognitive-behavioral therapy for sexually abused pre-school children (CBT-SAP) G2: Nondirective supportive therapy (NST)	Mean age; Age Range 4.68;2.11-7.1	58%	% Caucasian 54% % African American 42% % other race (not-specified) 4%	NR	NR	NR	NR	NR	NR
Cohen, 2004 ⁵⁰	G1: Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) G2: Child Centered Therapy for Treating PTSD	Both groups: 10.76 years Range 8-14 years	Both groups: 79%	% Caucasian Both groups: 60 % African American Both groups:28 % other race (biracial) Both groups: 7 % other race (not specified) Both groups: 1	% Hispanic/Latino Both groups: 4	maltreating biological (78% mother; 9% father; 2% stepmother; 5% grandmother , 1% stepfather and 1% grandfather) kinship (4% other female relative), adoptive (3% adoptive mother) and foster caregiver (4% foster mother)	Both groups: 37.07 (7.79)	G1: NR G2: NR	% Caucasian G1: NR G2: NR % African American G1: NR G2: NR % other race (specify) G1: NR G2: NR	% Hispanic/Latino G1: NR G2: NR % NOT Hispanic/Latino G1: NR G2: NR % other ethnicity (specify) G1: NR G2: NR
Deblinger, 2001 ⁵¹	G1: Supportive Therapy G2: Cognitive Behavioral Therapy	Both groups: 5.45 (1.47) Range 2-8 years	Both groups: 61%	% Caucasian 64 % African American 21 % other race (specify)	% Hispanic/Latino 2 % NOT Hispanic/Latino 98 % other ethnicity (not specified) 6	Maternal non-maltreating caregiver	Both groups: 33.11 (8.71)	100%	NR	NR

Table E-103. Trauma-focused cognitive behavioral therapy, population clinical characteristics

First Author, Year	Comparison Groups	Maltreatment Type	Number of Exposures, Duration of Exposure, Number of CPS Referrals	Child Clinical Presentation, % With MH Symptoms or Behavior Problem, % Meeting a Diagnosis	Caregiver Presentation % With MH symptoms, % Meeting a Diagnosis
Cohen, 1996 ⁴⁹	G1: Cognitive-behavioral therapy for sexually abused pre-school children (CBT-SAP) G2: Nondirective supportive therapy (NST)	Sexual abuse	Number of exposures One: 25% 2-5: 26% 6-10: 15% 10+: 29% Unknown: 5%	% with MH symptoms or behavior problems G1: 100% G2: 100% % meeting a dx G1: 100% G2: 100%	% with MH symptoms/substance abuse NR % meeting a dx NR
Cohen, 2004 ⁵⁰	G1: Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) G2: Child Centered Therapy for Treating PTSD	Sexual abuse	Number of exposures Both Groups: Median 4 and range 1-1000 Duration of exposure G1: NR G2: NR Number of CPS referrals G1: NR G2: NR	% with MH symptoms or behavior problems Both groups: 9 taking psychotropic medications and 20 previously received counseling for the present sexual abuse episode % meeting a dx 89 met full criteria for current PTSD	% with MH symptoms/substance abuse 16% psychotropic medications and 24% drug/alcohol abuse % meeting a dx NR
Deblinger, 2001 ⁵¹	G1: Supportive Therapy G2: Cognitive Behavioral Therapy	Sexual abuse	Number of exposures Once: 34% More than once: 66% Duration of exposure G1: NR G2: NR Number of CPS referrals G1: NR G2: NR	% with MH symptoms or behavior problems G1: NR G2:NR % meeting a dx G1: NR G2: NR	% with MH symptoms/substance abuse NR % meeting a dx NR 27% of mothers reported sexual assault as an adult and 73% did not. 45% mothers reported sexual abuse as a child and 54% denied sexual abuse.

Table E-104. Trauma-focused cognitive behavioral therapy, intervention characteristics

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
Cohen, 1996 ⁴⁹	G1: Cognitive-behavioral therapy for sexually abused pre-school children (CBT-SAP) G2: Nondirective supportive therapy (NST)	G1: 12 sessions over 12-16 weeks G2: 12 sessions over 12-16 weeks	G1: Child/parent G2: Child/parent	G1: Master's level clinicians G2: Master's level clinicians	G1: Yes G2: Yes	G1: Individual G2: Individual	G1: NR G2: NR
Cohen, 2004 ⁵⁰	G1: Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) G2: Child Centered Therapy for Treating PTSD	G1: 12 weekly sessions; treatment last 90 minutes total with 45 minutes for each individual session G2: NR	G1: parent/child G2: parent/child	G1: psychologists and social workers with cognitive behavioral and play therapy backgrounds G2: psychologists and social workers with cognitive behavioral and play therapy backgrounds	G1: Yes G2: Yes	G1: individual G2: individual	G1: NR G2: NR
Deblinger, 2001 ⁵¹	G1: Supportive Therapy G2: Cognitive Behavioral Therapy	G1: 11 sessions for 1 hour and 45 minutes each session weekly G2: 11 sessions for 2 hrs weekly	G1: parent/ child in separate age appropriate groups G2: parent/ child in separate age appropriate groups	All groups: Therapists (education not specified)	G1: Yes G2: Yes G3: Yes G4: Yes	G1: Group G2: Group	G1: NR G2: NR

Table E-105. Trauma-focused cognitive behavioral therapy, mental health outcomes

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Cohen, 1996 ⁴⁹	G1: Cognitive-behavioral therapy for sexually abused pre-school children (CBT-SAP) G2: Nondirective supportive therapy (NST)	CBCL (Soc, BPT, Int, Ext): self report CSBI: self report WBR (Type, Total): self report	CBCL-Soc Baseline score mean (SD) G1: 36.89 G2: 39.56 Endpoint score mean (SD) G1: 41.57 G2: 44.00 Change score mean (SD) G1: 4.68 p=NR G2: 4.44 p=NR Between group, p= NS CBCL-BPT Baseline score mean (SD) G1: 66.76 G2: 54.39 Endpoint score mean (SD) G1: 64.37 G2: 61.81 Change score mean (SD) G1: -2.39, p<0.001 G2: 7.42 p=NR Between group, p<0.01	CBCL-Int Baseline score mean (SD) G1: 64.79 G2: 62.70 Endpoint score mean (SD) G1: 52.87 G2: 61.89 Change score mean (SD) G1: -11.92 p<0.001 G2: -0.81 p=NR Between group, p<0.002 CBCL-Ext Baseline score mean (SD) G1: 64.66 G2: 62.59 Endpoint score mean (SD) G1: 54.58 G2: 59.04 Change score mean (SD) G1: -10.08 ,P< 0.001 G2: -3.55 ,P<0.001 Between group, p= NS	CSBI Baseline score mean (SD) G1: 25.16 G2: 25.37 Endpoint score mean (SD) G1: 11.47 G2: 17.85 Change score mean (SD) G1: -13.69 p<0.001 G2:-7.52 p=NR Between group, p<0.05	WBR-Type Baseline score mean (SD) G1: 6.57 G2: 6.38 Endpoint score mean (SD) G1: 3.57 G2: 4.73 Change score mean (SD) G1: 3.00 ,P< 0.001 G2: -1.65, p=NR Between group, p= NS WBR-Total Baseline score mean (SD) G1: 25.30 G2: 24.50 Endpoint score mean (SD) G1: 7.92 G2: 14.38 Change score mean (SD) G1: -17.38 ,P< 0.001 G2: 10.12 p<0.05 Between group, P<0.05

Table E-105. Trauma-focused cognitive behavioral therapy, mental health outcomes (continued)

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Cohen, 2004 ⁵⁰	G1: Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) G2: Child Centered Therapy for Treating PTSD	K-SADS CDI: self report STAIC: self report CBCL: objective observational CSBI parent report BDI: parent self report	[K-SADS] Re-experiencing Baseline score mean (SD) G1: 3.98 (1.31) G2: 4.08 (1.30) Endpoint score mean (SD) G1: 1.53 (1.39) G2: 2.32 (1.81) Change score mean (SD) Between group, p<0.01 [K-SADS] Avoidance Baseline score mean (SD) G1: 4.13 (1.33) G2: 4.35 (1.13) Endpoint score mean (SD) G1: 1.81 (1.36) G2: 1.62 (2.87) Between group, p<0.001 [K-SADS] Hypervigilance Baseline score mean (SD) G1: 3.67 (1.21) G2: 3.68 (1.26) Endpoint score mean (SD) G1: 1.69 (1.28) G2: 2.23 (1.59) Between group, p<0.01	[CBCL Total] Baseline score mean (SD) G1: 48.48 (27.90) G2: 54.29 (28.03) Endpoint score mean (SD) G1: 31.45 (21.75) G2: 40.79 (27.09) Between group, p<0.05 [CBCL Competence] Baseline score mean (SD) G1: 15.84 (3.59) G2: 15.45 (3.60) Endpoint score mean (SD) G1: 16.60 (3.53) G2: 16.33 (3.43) Between group, p=NS [CBCL Internalizing] Baseline score mean (SD) G1: 13.97 (9.24) G2: 17.04 (9.88) Endpoint score mean (SD) G1: 8.02 (7.21) G2: 8.87 (10.61) Between group, p=NS [CBCL Externalizing] Baseline score mean (SD) G1: 15.59 (10.47) G2: 17.18 (9.88) Endpoint score mean (SD) G1: 8.52 (211.65) G2: 10.22 (13.29) Between group, p=NS [CDI]	[BDI-II] Baseline score mean (SD) G1: 17.34 (11.30) G2: 16.10 (11.10) Endpoint score mean (SD) G1: 6.83 (8.73) G2: 9.25 (8.82) Between group, p<0.05 STAIC Trait Baseline score mean (SD) G1: 37.27 (6.83) G2: 39.10 (7.96) Endpoint score mean (SD) G1: 30.78 (7.20) G2: 33.69 (8.57) Between group, p=NS STAIC State Baseline score mean (SD) G1: 30.51 (6.84) G2: 31.48 (8.32) Endpoint score mean (SD) G1: 26.22 (5.10) G2: 27.76 (6.94) Between group, p=NS	None

Table E-105. Trauma-focused cognitive behavioral therapy, mental health outcomes (continued)

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Cohen, 2004 ⁵⁰ (continued)			[CSBI] Baseline score mean (SD) G1: 10.38 (9.02) G2: 11.42 (10.99) Endpoint score mean (SD) G1: 6.26 (6.02) G2: 8.20 (10.45)	Baseline score mean (SD) G1: 9.92 (7.50) G2: 12.11 (8.59) Endpoint score mean (SD) G1: 5.70 (5.47) G2: 8.79 (9.37) Between group, $p < 0.05$ Between group, $p = \text{NS}$	None	None

Table E-105. Trauma-focused cognitive behavioral therapy, mental health outcomes (continued)

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Deblinger, 2001 ⁵¹	G1: Supportive Therapy G2: Cognitive Behavioral Therapy	Child Behavior Checklist [CBCL] Child Sexual Behavior Inventory [CSBI] PTSD Scale (child)	[CBCL] Baseline score mean (SD) G1: 36.09 (23.04) G2: 40.90 (20.81) Posttest score mean (SD) G1: 26.13 (18.28) G2: 26.48 (21.32) Within group pre-posttest change score G1: -9.9 (d = .46) G2: -14.42 (d = .66) Follow up score mean (SD) G1: 25.74 (21.48) G2: 25.43 (25.23) Within group pretest-follow up change score mean G1: p=-10.25 G2: p=-15.46 Between group MANOVA (pooled SD across groups) TimexGroup: F = .37, p = NS (NR) Within group MANOVA (pooled SD across groups) Time: F = .10.15, p < 0.001	[CSBI] Baseline score mean (SD) G1: 6.39 (5.23) G2: 9.67 (5.67) Posttest score mean (SD) G1: 3.74 (4.93) G2: 5.48 (4.00) Within group change score mean G1: -2.65 (d = .47) G2: -4.19 (d = .74) Follow up score mean (SD) G1: 3.91 (5.39) G2: 7.52 (6.62) Within group pretest-follow up change score mean G1: -2.48 G2: -2.15 Between group, MANOVA (pooled SD across groups) TimexGroup: F = .90, p = NS (NR): 0.90 Within group MANOVA (pooled SD across groups) Time: F = 12.70, p<0.001	[PTSD Scale] Baseline score mean (SD) G1: 14.04 (12.35) G2: 14.43 (9.08) Posttest score mean (SD) G1: 6.09 (6.73) G2: 6.57 (7.92) Within group change score mean G1: -6.09 (d = .74) G2: -7.86 (d = .73) Follow up score mean (SD) G1: 5.22 (5.78) G2: 7.76 (8.61) Within group pretest-follow up change score mean G1: -8.82 G2: -6.67 Between group MANOVA (pooled SD across groups) TimexGroup: F = 0.43, p = NS (NR)) Within group MANOVA (pooled SD across groups) Time: F = 12.55, p<.0.001	None

Table E-106. Trauma-focused cognitive behavioral therapy, healthy caregiver child relationship outcomes

First Author, Year	Comparison Groups	Measures	Caregiver-Child Relationship	Caregiver-Child Relationship (Part 2)	Caregiver-Child Relationship (Part 3)	Caregiver-Child Relationship (Part 4)
Cohen, 2004 ⁵⁰ Cohen, 2004 ⁵⁰	G1: Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) G2: Child Centered Therapy for Treating PTSD	Parenting Practices Questionnaire (PPQ): self report	[Parenting Practices Questionnaire (PPQ)] Baseline score mean (SD) G1: 135.60 (15.20) G2: 136.44 (15.80) Endpoint score mean (SD) G1: 144.38 (15.55) G2: 139.19 (13.61) Change score mean (SD) Between group, p<0.001	NA	NA	NA

Table E-106. Trauma-focused cognitive behavioral therapy, healthy caregiver child relationship outcomes (continued)

First Author, Year	Comparison Groups	Measures	Caregiver-Child Relationship	Caregiver-Child Relationship (Part 2)	Caregiver-Child Relationship (Part 3)	Caregiver-Child Relationship (Part 4)
Deblinger, 2001 ⁵¹	G1: Supportive Therapy G2: Cognitive Behavioral Therapy	SCL-90-R Post-Traumatic Stress Subscale [SCL-90-R] (mother) Impact of Events-Intrusive Thoughts (mother) Impact of Events-Avoidance of Thoughts (mother) Parenting Practices Questionnaire (PPQ): self report	[SCL-90-R PTS Subscale] Baseline score mean (SD) G1: 18.17 (18.04) G2: 25.33 (16.07) Posttest score mean (SD) G1: 12.35 (11.67) G2: 14.67 (20.28) Within group change score mean G1: -5.82 (d = .34) G2: 10.66 (d = .62) Follow up score mean (SD) G1: 12.91 (12.19) G2: 11.48 (14.59) Within group pretest-follow up change score mean G1: -5.26 G2: -11.48 Between group MANOVA (pooled SD across groups) TimexGroup: F = 2.92, p = NS (NR) Within group MANOVA (pooled SD across groups) Time: F = 9.97, p<0.001	[PPQ] Baseline score mean (SD) G1: 147.00 (13.15) G2: 144.95 (12.41) Posttest score mean (SD) G1: 146.74 (12.93) G2: 149.48 (15.81) Within group change score mean G1: -1.26 (d = .02) G2: +4.48 (d = -.36) Follow up score mean (SD) G1: 148.39 (13.35) G2: 151.05 (15.16) Within group pretest-follow up change score mean G1: +1.39 G2: +6.10 Between group MANOVA (pooled SD across groups) TimexGroup: 1.38, p = NS (NR) Within group MANOVA (pooled SD across groups) Time: F = 3.54, p<0.05	Impact of Events-Intrusive Thoughts Baseline score mean (SD) G1: 12.26 (9.63) G2: 18.19 9.92) Posttest score mean (SD) G1: 9.26 (9.88) G2: 10.00 (10.49) Within group change score mean G1: -3.00 (d = .30) G2: -8.19 (d = .81) Follow up score mean (SD) G1: 8.65 (10.09) G2: 8.95 (9.49) Within group pretest-follow up change score mean G1: -3.61 G2: -9.14 Between group MANOVA (pooled SD across groups) TimexGroup: F 3.23, p<.05 Within group Time: F = 16.17, p<0.001 Within group MANOVA (pooled SD across groups) Time: F = 16.17, p<0.001	Impact of Events-Avoidance of Thoughts Baseline score mean (SD) G1: 13.91 (10.48) G2: 15.95 (8.13) Posttest score mean (SD) G1: 11.91 (9.85) G2: 10.90 (9.55) Within group change score mean G1: -2.00 (d = .21) G2: -5.05 (d = .54) Follow up score mean (SD) G1: 10.65 (10.02) G2: 8.90 (8.52) Within group pretest-follow up change score mean G1: -3.26 G2: -7.05 Between group MANOVA (pooled SD across groups) TimexGroup: F = 1.22, p = NS (NR) Within group MANOVA (pooled SD across groups) Time: F = 8.17, p < 0.001

Videotape Intervention

Table E-107. Videotape intervention, study characteristics

First Author, Year	State, Country	Source (s) of Funding	Study Design	KQ	Research Objective	Comparison Groups	Baseline N	Study Duration	Inclusion Criteria	Exclusion Criteria
Jinich, 1999 ⁵²	San Diego, California	Foundation/non-profit (National Center on Child Abuse & Neglect)	Randomized controlled trial	1	To develop a videotape intervention that sought to enhance supportive behaviors in mothers of children who were being examined because of suspected molestation, and to evaluate the relationship between mothers' reported responses to & beliefs about the molestation, and children's perceptions of support	G1: Treatment videotape G2: Control videotape	Parents G1: 32 G2: 32 Children G1: 15 G2: 15	Post Intervention: Once immediately after videotape viewing Follow-up: Once, 1 week following the videotape viewing	Mothers who chose or were referred to a child sexual abuse evaluation clinic to have their child assessed for suspected sexual abuse; Children needed to be: Aged 4 to 12 years old; English-speaking; Nondevelopmentally disabled; Probable victims of sexual molestation	Mothers who did not speak English; Children who: Were severely physically or developmentally disabled; if the child did not go home with parents following assessment

Table E-108. Videotape intervention, population characteristics

First Author, Year	Comparison Groups	Child Age Mean (SD); Range	Child Sex % Female	Child Race	Child Ethnicity	Caregiver Type	Caregiver Age mean (SD)	Caregiver Sex % Female	Caregiver Race	Caregiver Ethnicity
Jinich, 1999 ⁵²	G1: Treatment videotape G2: Control videotape	Total sample G1: 7.5 (NR) G2: 8.1 (NR)	Total sample G1: 72% G2: 78%	Total sample % Caucasian G1: 55% G2: 70% % African American G1: 21% G2: 10% % other race - Asian G1: 4% G2: 8%	Total sample % Hispanic/Latino G1: 19% G2: 12% % NOT Hispanic/Latino G1: 81% G2: 88% % other ethnicity (specify) G1: NR G2: NR	Mothers (unclear whether biological, adoptive, etc.)	Total sample G1: 33 (NR) G2: 31 (NR)	G1: 100% G2: 100%	Total sample % Caucasian G1: 66% G2: 78% % African American G1: 15% G2: 8% % other race - Asian G1: 0% G2: 3%	Total sample % Hispanic/Latino G1: 19% G2: 10% % NOT Hispanic/Latino G1: 81% G2: 90% % other ethnicity (specify) G1: NR G2: NR

Table E-109. Videotape intervention, population clinical characteristics

First Author, Year	Comparison Groups	Maltreatment Type	Number of Exposures, Duration of Exposure, Number of CPS Referrals	Child Clinical Presentation, % With MH Symptoms or Behavior Problem, % Meeting a Diagnosis	Caregiver Presentation % With MH Symptoms, % Meeting a Diagnosis
Jinich, 1999 ⁵²	G1: Treatment videotape G2: Control videotape	G1: Sexual abuse G2: Sexual abuse	Number of exposures G1: NR G2: NR Duration of exposure G1: NR G2: NR Number of CPS referrals G1: NR G2: NR	% with MH symptoms or behavior problems G1: NR G2: NR % meeting a dx G1: NR G2: NR	% with MH symptoms/substance abuse NR % meeting a dx NR

Table E-110. Videotape intervention, intervention characteristics

First Author, Year	Comparison Groups	Intervention Length/Dose	Intervention Recipient	Intervention Provider	Intervention Fidelity Tool? (Yes/No)	Intervention Delivery Mode (Format)	Intervention Location
Jinich, 1999 ⁵²	G1: Treatment videotape G2: Control videotape	G1: One 22-minute viewing session G2: One 22-minute viewing session	G1: Parent G2: Parent	G1: Local TV News Anchorwoman (video narrator) G2: NR	G1: No G2: No	G1: Individual G2: Individual	G1: Center for Child Protection G2: Same as G1

Table E-111. Videotape intervention, mental health outcomes

First Author, Year	Comparison Groups	Measures	Mental Health & Behavior	Mental Health & Behavior (Part 2)	Mental Health & Behavior (Part 3)	Mental Health & Behavior (Part 4)
Jinich, 1999 ⁵²	G1: Treatment videotape G2: Control videotape	Parent Impact Questionnaire (PIQ)-Section IV=Self-Report; Children's Impact of Traumatic Events Scale-Revised (CITES-R)=Clinical Assessment	PTSD (Negative reactions to others): CITES-R Baseline score mean (SD) G1: NA G2: NA Endpoint score mean (SD) G1: NA G2: NA Change score mean (SD) G1: ,P=NA G2: ,P=NA Between group, p= NA Follow up score mean (SD) G1: 1.26 (0.39) G2: 1.38 (0.42) Change score mean (SD) G1: ,P=NA G2: ,P=NA Between group, p> 0.05 (NS)	PTSD (Self-blame): CITES-R Baseline score mean (SD) G1: NA G2: NA Endpoint score mean (SD) G1: NA G2: NA Change score mean (SD) G1: ,P=NA G2: ,P=NA Between group, p= NA Follow up score mean (SD) G1: 1.34 (0.27) G2: 1.47 (0.36) Change score mean (SD) G1: ,P=NA G2: ,P=NA Between group, p> 0.05 (NS)	PTSD (Social support): CITES-R Baseline score mean (SD) G1: NA G2: NA Endpoint score mean (SD) G1: NA G2: NA Change score mean (SD) G1: ,P=NA G2: ,P=NA Between group, p= NA Follow up score mean (SD) G1: 2.99 (0.14) G2: 2.79 (0.26) Change score mean (SD) G1: ,P=NA G2: ,P=NA Between group, p> 0.05 (NS)	PTSD (Empowerment): CITES-R Baseline score mean (SD) G1: NA G2: NA Endpoint score mean (SD) G1: NA G2: NA Change score mean (SD) G1: ,P=NA G2: ,P=NA Between group, p= NA Follow up score mean (SD) G1: 2.44 (0.28) G2: 2.36 (0.36) Change score mean (SD) G1: ,P=NA G2: ,P=NA Between group, p> 0.05 (NS)

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